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ABSTRACT

The multiunit elementary school is an organizational structure for elementary schools which incorporates shared decision-making into its operations. The school's Instructional Improvement Committee (IIC) serves to link the teaching and administrative levels of the school by having teacher representatives and the principal share the responsibility for formulating decisions, plans, and procedures which coordinate the school's instructional program. A study was conducted to determine the variables which associate with operationally effective IIC's. The results of the study revealed a significant correlation between IIC effectiveness and the interrelationship of the IIC chairman's leader Consideration and Initiation of Structure behaviors and IIC chairman--IIC member compatibility. Other variables such as attendance at workshops, chairman's administrative experience, or the amount of meeting time were not significant. (WS)

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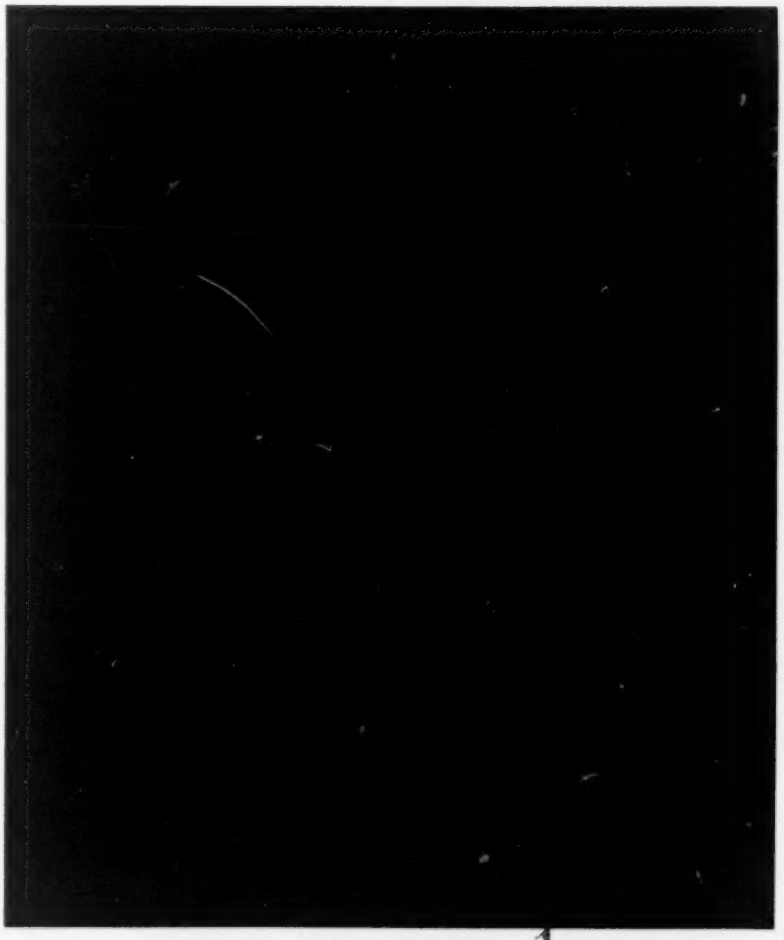

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Technical Report No. 230

AN ANALYSIS OF THE RELATIONSHIP BETWEEN EFFECTIVENESS OF THE MULTIUNIT ELEMENTARY SCHOOL'S INSTRUCTIONAL IMPROVEMENT COMMITTEE AND INTERPERSONAL AND LEADER BEHAVIORS

Report from the Facilitative Environments Project

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STATEMENT OF FOCUS

Individually Guided Education (IGE) is a new comprehensive system of elementary education. The following components of the IGE system are in varying stages of development and implementation: a new organization for instruction and related administrative arrangements; a model of instructional programing for the individual student; and curriculum components in prereading, reading, mathematics, motivation, and environmental education. The development of other curriculum components, of a system for managing instruction by computer, and of instructional strategies is needed to complete the system. Continuing programmatic research is required to provide a sound knowledge base for the components under development and for improved second generation components. Finally, systematic implementation is essential so that the products will function properly in the IGE schools.

The Center plans and carries out the research, development, and implementation components of its IGE program in this sequence: (1) identify the needs and delimit the component problem area; (2) assess the possible constraints--financial resources and availability of staff; (3) formulate general plans and specific procedures for solving the problems; (4) secure and allocate human and material resources to carry out the plans; (5) provide for effective communication among personnel and efficient management of activities and resources; and (6) evaluate the effectiveness of each activity and its contribution to the total program and correct any difficulties through feedback mechanisms and appropriate management techniques.

A self-renewing system of elementary education is projected in each participating elementary school, i.e., one which is less dependent on external sources for direction and is more responsive to the needs of the children attending each particular school. In the IGE schools, Center-developed and other curriculum products compatible with the Center's instructional programing model will lead to higher morale and job satisfaction among educational personnel. Each developmental product makes its unique contribution to IGE as it is implemented in the schools. The various research components add to the knowledge of Center practitioners, developers, and theorists.

ACKNOWLEDGEMENTS

The author expresses his sincere appreciation for the support, encouragement, and friendship extended by his major professor, Donald N. McIsaac. And to Professors James M. Lipham and Richard A. Rossmiller a special thanks for the time and assistance they provided as members of the writing committee. Appreciation is also extended to Professors Thomas A. Romberg and Marvin J. Fruth who served as members of the examining committee.

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ABSTRACT

The multiunit elementary school, developed by the Wisconsin Research and Development Center for Cognitive Learning, is an organizational structure for elementary schools which incorporates shared decision making into its operations. The multiunit school's Instructional Improvement Committee (IIC) serves to link the teaching and administrative levels of the school by having teacher representatives and the building principal share the responsibility for formulating decisions, plans, and procedures which coordinate the school's instructional program. The IIC has been provided with operational guidelines by the Wisconsin Research and Development Center, but recent studies have indicated a discrepancy is existent between actual and prescribed IIC operations.

The purpose of the study was to determine those variables which associate with operationally effective IIC's.

The framework for the study was drawn from social system theory, leadership theory, and Schutz's theory of interpersonal compatibility. The major hypothesis of the study stated: There is no significant multiple correlation between IIC effectiveness and the interrelationship between the IIC chairman's leader Initiation of Structure and Consideration behavior and IIC chairman-IIC member compatibility. A model of task groups was proposed as a means to describe pictorially

the interrelationship of these variables and IIC effectiveness. Four factors that researchers and practitioners had suggested were related to IIC effectiveness were analyzed individually: IIC member attendance at R and D Center supported workshops for multiunit school principals and unit leaders; the IIC's involvement in its prescribed tasks; the IIC chairman's administrative experience; and the length of time the IIC spends meeting together each month. Data were collected from nine schools in five Colorado school districts and from twenty-two schools in seventeen Wisconsin districts.

The Leadership Behavior Description Questionnaire-Form XII and the FIRO-B (Fundamental Interpersonal Relations Orientation-Behavior) questionnaires were employed to collect data on the IIC chairman's leader behavior and on the IIC chairman's and the IIC members' interpersonal relations orientations, respectively. Biographical data also were collected from all IIC members. Modifications of Hage's output measures were combined with an assessment of an IIC's involvement in its prescribed tasks to determine each IIC's effectiveness.

A multiple stepwise linear regression analysis was used to test the major hypothesis and to determine an expanded regression model for IIC effectiveness. A Pearson r was used to test the suggested relationships. The probability level for all tests of statistical significance was established at .05.

The analyses of the data revealed the following: A significant multiple correlation existed between IIC effectiveness and the interrelationship of the IIC chairman's leader Consideration and Initiation of Structure behaviors and IIC chairman-IIC member

compatibility. The expanded regression model revealed a significant multiple correlation to exist between IIC effectiveness and the interrelationship of (1) the IIC chairman's leader Consideration behavior, (2) the amount of time the IIC spent meeting together each month, (3) the IIC whose members have a preference for interaction with others, (4) the IIC whose members have a preference for close personal relations both toward people and from them toward self, (5) IIC's with fewer members, and (6) IIC's in which there is no individual in control. The tests of the assumed correlations revealed IIC effectiveness to be significantly related to an IIC's involvement in its prescribed tasks. The effectiveness of an IIC was found not to be related significantly to IIC member attendance at R and D Center supported workshops, the IIC chairman's administrative experience, or the amount of time the IIC spent meeting together each month when the variable was considered separately.

CHAPTER I

INTRODUCTION

Schools traditionally have been organized as bureaucracies whose accompanying authority structures have prescribed that the building principal should have the exclusive right to formulate all decisions and procedures relative to school operations. But teachers are now insisting that, because of their professional preparation, they should be given the right and responsibility for determining instructional practices. The consequence of the bureaucratic pattern of school organization has been that in its conventionality, little opportunity has existed for determining the efficacy of involving teachers in the governance of schools.[1] As a result, little is known about the problems which might be encountered if teachers were to be involved formally in the school's authority structure.

It is fortuitous, therefore, that the Wisconsin Research and Development Center for Cognitive Learning has developed a new organizational pattern for the elementary school which incorporates this very mode of operation. It provides for teachers the opportunity to be partners with the school principal in the governance of the school. The new

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[1]William R. Dill, "Decision-Making," in BEHAVIORAL SCIENCE AND EDUCATIONAL ADMINISTRATION, Sixty-third yearbook of the National Society for the Study of Education (Chicago: University of Chicago Press, 1964), p. 214.

structure, designated the multiunit elementary school, makes provisions for this partnership in the Instructional Improvement Committee (IIC), a building-level, decision-making body which typically is comprised of the building principal and the leader of each instructional unit. The IIC represents an attempt to ameliorate the inherent conflict potential Parsons, and Blau and Scott[1] described to exist in bureaucracies employing professionals. The IIC involves teachers and the principal in the formulation of plans and procedures related to instruction.

It is the IIC's potential for collegial decision making that provides this study with the example needed to determine the practicality and efficacy of teacher involvement in school decision making.

Statement of the Problem

Since 1965 the Wisconsin Research and Development Center for Cognitive Learning (hereafter termed the Center) has directed its financial, material, and human resources toward the development of a system of individually guided education (IGE) for the elementary school. The IGE system,[2] a process of determining and meeting the specific learning needs of each pupil, has been designed to produce higher educational achievement in elementary school-aged children by means of seven components. One component of IGE is the multiunit elementary school (MUS-E) which was designed to produce an environment in which the other six

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[1]Talcott Parsons in P. M. Blau and W. R. Scott, FORMAL ORGANIZATIONS (San Francisco: Chandler Publishing Co., 1962).

[2]Herbert J. Klausmeier, et al., INDIVIDUALLY GUIDED EDUCATION AND THE MULTIUNIT ELEMENTARY SCHOOL: GUIDELINES FOR IMPLEMENTATION (Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1971), pp. 17-30.

components could be introduced and refined. The impetus to develop the MUS-E came in response to problems, traditions, and constraints encountered when attempts were made to implement IGE in conventional age-graded elementary schools.[1]

The MUS-E "may be thought of as an invention of organizational arrangements that have emerged since 1965 from a synthesis of theory and practice regarding instructional programing for individual students, horizontal and vertical organization for instruction, role differentiation, shared decision making by groups, open communication, and administrative and instructional accountability."[2] Figure 1 shows the prototypic organization of an MUS-E of 600 students. The organizational hierarchy consists of interrelated decision-making groups at three distinct levels of operation. In addition to the building level Instructional Improvement Committee (IIC), the focus of the study, there are the instructional and research unit (unit) at the classroom level, and the systemwide policy committee (SPC) at the district level. The figure shows the IIC to be comprised of the building principal and the unit leaders, and provision is made to include both external consultants and the director of the school's instructional materials center (IMC).

In the prototypic model of the MUS-E, the building principal's traditionally exclusive responsibility for making decisions related to planning and coordinating instructional activities is the shared responsibility of the principal and the unit leaders. The theoretical justification for this mode of operation is based upon two fundamental concepts:

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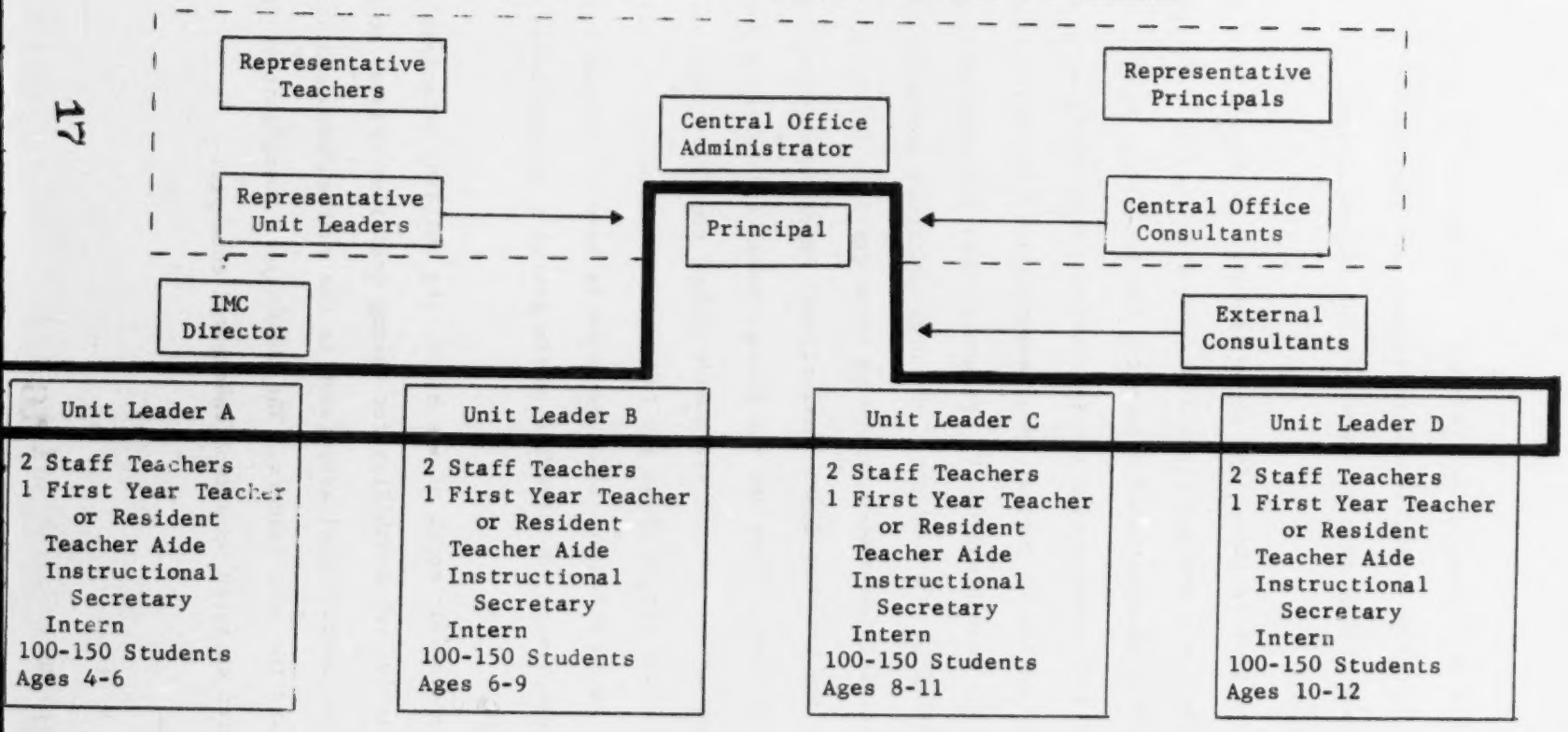
[1]Ibid., p. 4.

[2]Ibid., p. 20.

FIGURE 1

ORGANIZATIONAL CHART OF A MULTIUNIT SCHOOL OF 600 STUDENTS



━━━ Building Instructional Improvement Committee
- - - - Systemwide Policy Committee

Note. — This figure was reproduced from a book by Klausmeier, et al., INDIVIDUALLY GUIDED EDUCATION AND THE MULTIUNIT ELEMENTARY SCHOOL: GUIDELINES FOR IMPLEMENTATION, p. 21.

1. Group interaction can produce a total effect greater than the sum of its parts;

2. A hierarchy of decision-making bodies, i.e., the unit staff and the IIC, . . . places decisions in the hands of those most able to make the decisions.[1]

In order to operationalize these concepts, the multiunit elementary school's teaching and administrative levels are linked by means of the IIC. This arrangement marks a distinct departure from the conventional, bureaucratic organization wherein these echelons are vertically separated from each other and responsibility for decisions concerning the instructional program are formally and exclusively assigned to the principal.

The IIC takes initiative in facilitating this linkage by means of its four main functions:

1. Stating the educational objectives and outlining the educational program for the entire school building;

2. Interpreting and implementing systemwide and statewide policies that affect the educational program of the building;

3. Coordinating the activities of the various units to achieve continuity in all curriculum areas;

4. Arranging for the use of facilities, time, material, etc., that the units do not manage independently.[2]

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[1]Joan Beugen, Ira Kerns, and Norman Graper, INDIVIDUALLY GUIDED EDUCATION: THE PRINCIPAL'S HANDBOOK (Dayton, Ohio: The Institute for Development of Educational Activities, 1971), p. 13.

[2]Klausmeier, op. cit., p. 22.

These four functions also have been reiterated in the form of performance criteria which are categorized as essential or desirable for the IIC.[1] "It is the Center's expectation that the school adopting the IGE/MUS-E program . . . will achieve its goal for the learner as a direct result of utilizing all or most of the practices and procedures contained in this set of objectives."[2]

Despite the development of the prototypic organizational model and the set of performance objectives to guide the principal and the unit leaders, it has become apparent that shared decision-making cannot be realized automatically through the establishment of a set of guidelines for the organization's formal operations. The Center for the Advanced Study of Educational Administration (CASEA) at the University of Oregon conducted a longitudinal study in 1967-68 in which data were collected from three MUS-E's.[3] Evidence was found in two of the three schools that there was considerable difference between the expected and the actual functions of the IIC.

In 1970-71, the Wisconsin Research and Development Center evaluated the operation of seventeen multiunit schools in Wisconsin.[4] The results of this study revealed IIC characteristics similar to those

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[1]Ibid., pp. 97-126.

[2]Ibid., p. 91.

[3]Roland J. Pellegrin, SOME ORGANIZATIONAL CHARACTERISTICS OF MULTIUNIT SCHOOLS, Working Paper No. 22 (Madison, Wisconsin: Wisconsin Research and Development Center, 1969), pp. 23-24.

[4]Mary Quilling, et al., EVALUATION OF MULTIUNIT ELEMENTARY SCHOOLS, 1970-71 (unpublished preliminary draft).

found by Pellegrin. Despite the fact that most IIC's were meeting weekly and were attended regularly by all prototypically prescribed IIC members, "the IIC's were still not involved in many of the functions assigned them."[1]

Pellegrin's[2] descriptive research and the Center's 1970-71 MUS-E evaluation[3] represent the only existing empirical evidence of the operational characteristics of the MUS-E, and more specifically, the IIC. The Center's evaluation speculated that IIC variability might be due to the lack of time spent in planning and the absence of a staff development program prepared exclusively for IIC members.[4]

These two studies have raised questions with respect to the efficacy of involving teachers in the decision-making structure of the school. With the exception of the speculative reasons mentioned, no attempt has been made to determine empirically the factors which significantly influence the operation of the Instructional Improvement Committee and its effectiveness. It should not be surprising, however, that actual organizational procedures and outcomes depart from expected designs:

> The fact that an organization has been formally established . . . does not mean that all activities and interactions of its members conform strictly to the official blueprint. Regardless of the time and effort devoted . . . to designing a rational

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[1]Ibid.

[2]Pellegrin, op. cit.

[3]Quilling, op. cit.

[4]Ibid.

> organization chart and elaborate procedure manuals, this official plan can never completely determine the conduct and social relations of the organization's members.[1]

Previous studies in organizational contexts similar to that conceptualized for the MUS-E have indicated the possibility that group effectiveness can be benefitted by leader-member compatibility, i.e., the extent to which the members get along with their superior. If the existence and degree of compatibility can be shown to be related directly to group effectiveness, it might be concluded that group effectiveness could be improved if incompatibility can be reduced in an existent group or avoided in the formation of a group.

The purpose of the study was to investigate the relationship between IIC effectiveness and the compatibility between the chairman and the members of a multiunit elementary school's Instructional Improvement Committee. A sample of thirty-one multiunit elementary schools participated in the study. The entire instructional staff of each school provided data relative to IIC effectiveness, IIC members provided data relative to their fundamental interpersonal relations orientation, and the building principal's leader behavior in the IIC was described by those who regularly meet with him in this body.

A Theoretical Model for the Study

The theoretical model for the study is adapted from selected aspects of social system theory, participative decision-making theory,

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[1]Blau and Scott, op. cit., p. 5.

and leadership theory. An illustration of this model is shown in Figure 2. The model is constructed from three dimensions whose relationships appear critical to the realization of an effective IIC. The dimensions are: leader-member compatibility, leader consideration behavior, and leader initiating structure behavior.

The underlying assumption of the model is that if an IIC is to be an effective component of the IGE/MUS-E framework, the building principal's leader behavior must be compatible with the need-disposition of the IIC members. An IIC in which the building principal encourages participation may be equally as effective as one in which the principal dominates and directs its operations; thus, the IIC's effectiveness will be determined largely by the personalities and need-dispositions of its members.

The elements of the model provide the skeletal framework of a three-dimensional space into which types of IIC's can be divided, e.g., those which fall into the upper half of groups in each dimension and those which fall into the lower half of groups in each dimension. This procedure yields eight spatial cells or octants into which IIC's can be grouped according to their high/low ratings on each of the three dimensions. From this model, hypotheses can then be generated with regard to an effectiveness expectation for the different clusters of IIC's.

Social System Theory

Parsons[1] developed the general theoretical framework for the study of social system and later applied it to the educational

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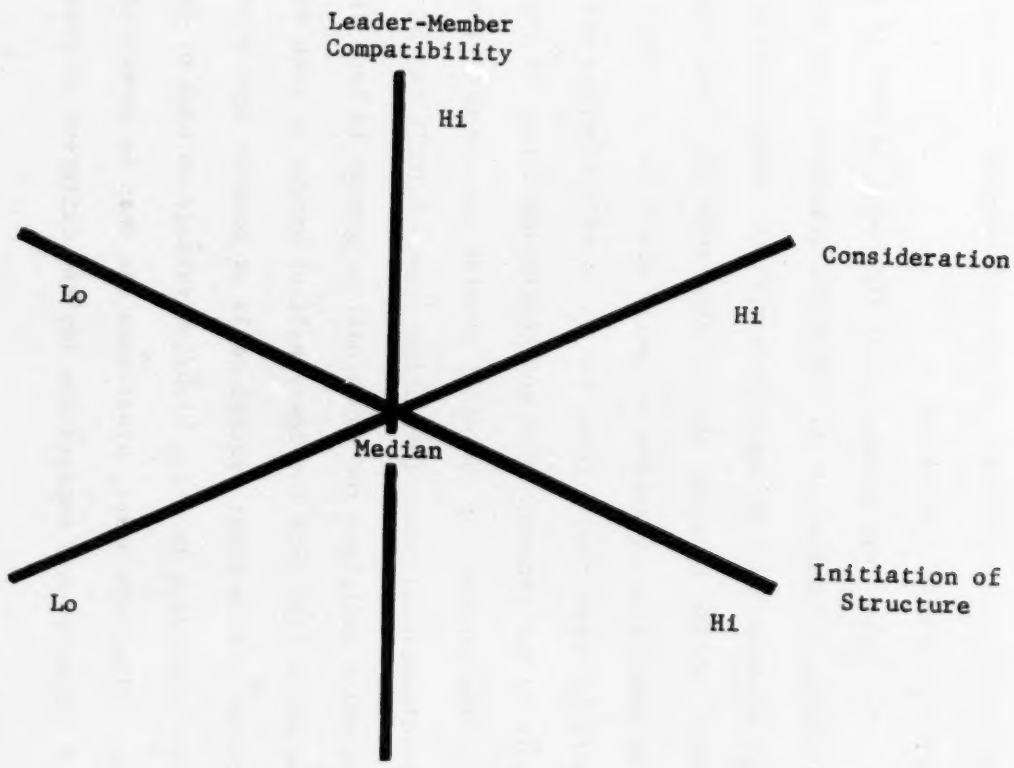
[1]Talcott Parsons, THE SOCIAL SYSTEM (New York: Free Press, 1951).

FIGURE 2

A THREE-DIMENSIONAL MODEL OF TASK GROUPS



organization.[1] Getzels and Guba[2] also applied social system theory to educational administration, as did Getzels, Lipham, and Campbell.[3] The social system model, shown in Figure 3, illustrates social behavior as a function of the social system in which the individual operates. More specifically, social behavior is a function of the personality of the individual and the role within the institution in which the individual finds himself. Getzels, Lipham, and Campbell have formulated this relationship as B = f (R x P) or, behavior is a function of role and personality.

The model is appropriate when attempting to explain the relationship between institutional expectations regarding teacher involvement in decision making, and the personality dispositions of the individuals involved. This relationship is illustrated by two dimensions of the theoretical model -- the normative or institutional dimension, and the idiographic or personal dimension. The normative dimension includes the institutional roles and role expectations. Specifically:

> In relation to specific groups or institutions in a social system, roles may be thought of as the structural or normative elements defining the behavior expected of role incumbents or actors, that is, their mutual rights and obligations. In this sense, it is

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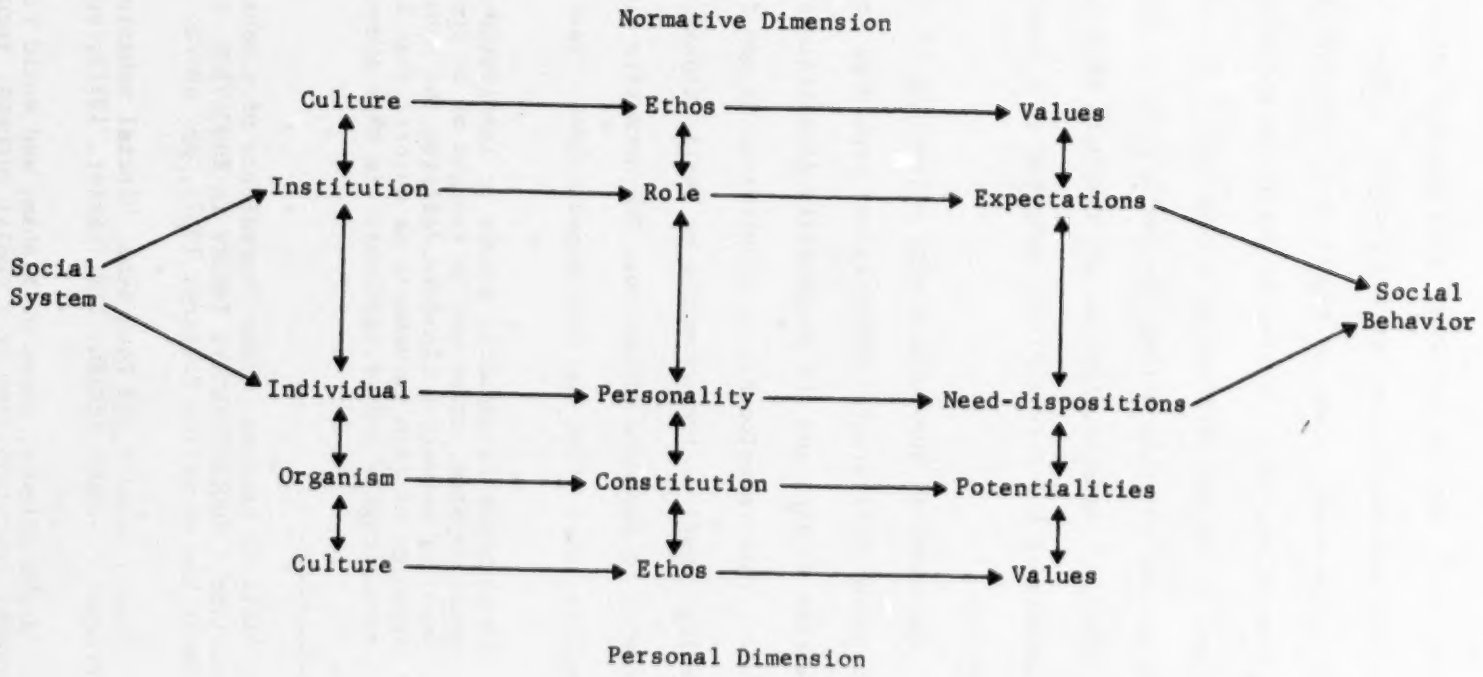
[1]Talcott Parsons, "Some Ingredients of a General Theory of Formal Organization," ADMINISTRATIVE THEORY IN EDUCATION, Ed., Andrew Halpin (New York: The Macmillan Company, 1967), pp. 40-72.

[2]Jacob Getzels and Egon Guba, "Social Behavior and the Administrative Process," SCHOOL REVIEW, LXV (Winter, 1957), pp. 423-441.

[3]Jacob Getzels, James M. Lipham, and Roald F. Campbell, EDUCATIONAL ADMINISTRATION AS A SOCIAL PROCESS: THEORY, RESEARCH AND PRACTICE (New York: Harper and Row, 1968).

FIGURE 3

GENERAL MODEL OF THE MAJOR DIMENSIONS OF BEHAVIOR
IN A SOCIAL SYSTEM



Note. — This figure was reproduced from a book by Getzels, Lipham, and Campbell, Educational Administration as a Social Process: Theory, Research, Practice, (1968), p. 105.

> what is supposed to be done in order to carry out the purposes of the system rather than what is actually done that defines the institutional role.[1]

> . . . expectations are those rights and duties, privileges and obligations -- in a word, those prescriptions -- that delineate what a person should and should not do under various circumstances as the incumbent or a particular role in a social system.[2]

The idiographic dimension of a social system includes individual personalities and their need-dispositions. Specifically:

> To understand the specific behavior and social interaction of a particular role incumbent, it is not enough to know the nature of the roles and expectations. . . . We must also know the nature of the individuals inhabiting the roles and their modes of perceiving and reacting to the expectations.[3]

> Central to the . . . definition of personality are the analytic elements that have been referred to as need-disposition. Just as the role may be defined by the component expectations, so personality may be defined by the component need-disposition.[4]

For the purpose of this study, Instructional Improvement Committees were the focal social system. The normative dimension of the IIC, as an institution, contains constituent roles and their accompanying expectations.[5] The principal's leader behavior represents the normative

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[1]Ibid., p. 60.

[2]Ibid., p. 64.

[3]Ibid., p. 66.

[4]Ibid., p. 70.

[5]H. J. Klausmeier, et al., op. cit., pp. 97-126.

dimension in the IIC. The IIC also contains an idiographic dimension composed of individuals, their personalities, and their need-dispositions.

Since the behavior of an individual is a function of the interaction of the two dimensions, conflict between the dimensions can be dysfunctional to the organization. Conflict was defined by Getzels, Lipham, and Campbell as "the mutual interference of parts, actions, and reactions."[1] This study considered conflict created by discrepancies between the operational expectations attaching to the principal's leader behavior and the patterns of need-dispositions characteristic of the members of the IIC.

Participative Decision Making

Stogdill broadly defines operations as "all the actions and interactions which maintain the structure and accomplish the purpose of a group."[2] Lowin[3] and Dill[4] have classified a normative or institutional mode of operations similar to that conceptualized for the IIC as participative decision making (PDM). Lowin has defined PDM as being

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[1]Ibid., p. 108.

[2]Ralph M. Stogdill, INDIVIDUAL BEHAVIOR AND GROUP ACHIEVEMENT: A THEORY (New York: Oxford University Press, 1959), p. 41.

[3]Aaron Lowin, "Participative Decision Making: A Model, Literature Critique, and Prescriptions for Research," ORGANIZATIONAL BEHAVIOR AND HUMAN PERFORMANCE, III (1968), pp. 68-106.

[4]Dill, op. cit., p. 214.

that mode in which decisions as to activities are arrived at by the very persons who are to execute those decisions.[1]

The fundamental assumption underlying the utility of a PDM mode of operations is that better quality decisions are possible and that it is easier for administrators to gain cooperation in implementing decisions when groups are given an opportunity to participate in their formulation.[2]

Still, the applicability of ideas about participative decision making no longer seems as obvious as it once did. Inviting wider involvement may not always bring positive results. In the absence of a body of research with regard to the IIC, inferences about PDM in the IIC were drawn from the numerous experimental and observational studies of PDM which appeared in organization, management, and business literature.

The studies focusing on variables which interfere with PDM suggested that the participants are the critical factors. Dill[3] observed that the opportunity to participate has not always been highly prized by many people. Many administrators in their observations justifiably reported that they were not just showing authoritarian attitudes when they complained that the people who worked with them were not interested in responsibility.

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[1]Lowin, op. cit., p. 69.

[2]Russel T. Gregg, "The Administrative Process," in R. F. Campbell and R. T. Gregg (Eds.), ADMINISTRATIVE BEHAVIOR IN EDUCATION (New York: Harper and Bros., 1957), pp. 278-280.

[3]Dill, op. cit., p. 215.

French, et al.,[1] showed that some employees were quite willing to let superiors make decisions for them and that disinterest in participation could be traced to basic personality characteristics.

Tannenbaum[2] reported results of a study in which he found that an individual's response to the behavior of his peers and superiors was influenced by the individual's personality predisposition. Workers whose predispositions reflected a desire to participate in decisions affecting them responded favorably to an increase in participation. The orientation of about one-sixth of the employees involved in the participation program of the experiment, however, was toward dependent rather than participative behavior, and these workers reacted adversely to the sudden substantial increase in participation in decisions about their work.

Vroom[3] found that workers who were more authoritarian responded less favorably to participation while those who had great "need for independence" reacted more favorably. This study provided additional evidence that an individual's response to a PDM expectation will be conditioned by the individual's personality, interpersonal skills, and expectations.

Since the mode of operations prescribed for the IIC departs from the traditional decision-making structure with which most IIC members

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[1]J. R. P. French, Jr., Joachim Israel, and Dagfinn As, "An Experiment on Participation in a Norwegian Factory," HUMAN RELATIONS, XIII (1960), pp. 3-20.

[2]A. S. Tannenbaum, "The Relationship Between Personality and Group Structure," (unpublished doctoral dissertation, Syracuse University, 1954).

[3]Victor H. Vroom, SOME PERSONALITY DETERMINANTS OF THE EFFECTS OF PARTICIPATION (Englewood Cliffs, New Jersey: Prentice Hall, 1960).

are familiar, the studies conducted by Bruner and Tagiuri[1] and Haire and Grunes[2] are pertinent to this study. Their findings suggested that an individual's past experience and particular background affect his response to institutional role expectations. For example, experiments in participation sometimes may be seen, correctly or incorrectly, as false invitations to come in and discuss decision matters which already have been decided.

Leadership

Leadership, "the performance of those acts which influence group activities toward goal setting and goal achievement,"[3] is a phenomenon of great concern in our society. One motive which may have impelled this interest is our society's system of democratic values. Inherent within this value system is a rejection of the notion that some men are born to rule, and an acceptance of the belief that leadership behavior may be learned by anyone. Imbued with a sense of responsibility for providing a formula for developing leadership in individuals, social psychologists have long been in conflict not so much with the definition of leadership but with its implementation. In an attempt to identify

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[1]J. S. Bruner and R. Tagiuri, "Perception of People," in Gardner Lindzey (Ed.), HANDBOOK OF SOCIAL PSYCHOLOGY (Reading, Massachusetts: Addison-Welsey, 1954), pp. 634-655.

[2]Mason Haire and W. F. Grunes, "Perceptual Defenses: Processes Protecting an Organized Perception of Another Personality," HUMAN RELATIONS, IV (1950), pp. 403-412.

[3]Ralph M. Stogdill, "Leadership, Membership, and Organization," PSYCHOLOGICAL BULLETIN, 47 (1950), pp. 1-14.

"that process" which facilitates desired outcomes, the approaches taken by social psychologists have varied greatly over the years.

Early efforts to isolate unique psychological and physical characteristics, or traits, of acknowledged leaders proved futile.[1] Dissatisfaction with the trait approach led to studies in which the focus switched from the personality of the individual leader to leader behavior and subsequently, to the total event where leadership was perceived.

In the Ohio State Leadership Studies (OSLS), the approach to the topic was to examine and measure performance or behavior rather than human traits. The objective of the OSLS was to describe leader behavior in its broadest sense, not just "good leadership." From the OSLS, two dimensions of leader behavior consistently accounted for a large portion of the leader behavior of those investigated.[2] These dimensions or factors were labeled "consideration" and "initiating structure." Consideration behavior was characterized by the leader who regarded the comfort, well being, status, and contribution of followers.[3] Initiating structure behavior was characterized by the leader who clearly defined his own role, the role he expected of others, and

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[1]Cecil A. Gibb, "Leadership," in Gardner Lindzey (Ed.), HANDBOOK OF SOCIAL PSYCHOLOGY (Reading, Massachusetts: Addison-Wesley Pub. Co., In., 1954). See also Ralph M. Stogdill, "Personal Factors Associated with Leadership: A Survey of the Literature," JOURNAL OF PSYCHOLOGY, 25 (1948), pp. 35-71.

[2]A. W. Halpin and B. J. Winer, "A Factorial Study of the Leader Behavior Descriptions," in R. M. Stogdill and A. E. Coons (Eds.), LEADER BEHAVIOR: ITS DESCRIPTIONS AND MEASUREMENT (Columbus, Ohio: The Ohio State University Press, 1957), pp. 39-51.

[3]Ibid., p. 42.

endeavored to establish well-defined patterns of organization, channels of communication, and ways of getting jobs done.[1]

A number of studies which sought to determine whether effectiveness was related to these leader behaviors employed the OSLS concept of initiating structure (IS). Fleishman, Harris, and Burtt[2] reported a positive correlation of IS and productivity in non-production units. Fleishman and Harris[3] found grievances and turnover generally to be related positively to IS irrespective of the task group. Fleishman and Peters[4] reported no relationship between IS and productivity. Halpin[5] reported low but positive correlations of airplane commanders' IS scores and rated proficiency. The variability in these studies indicated that leader behavior alone could not provide an accurate predictive measure of leader/group effectiveness.

Thus, leadership theorists turned to the total event in which leadership was observed. Particular stress was placed on the importance

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[1]Ibid., p. 43.

[2]E. A. Fleishman, E. F. Harris, and R. D. Burtt, LEADERSHIP AND SUPERVISION IN INDUSTRY (Columbus, Ohio: Ohio State University Press, 1955).

[3]E. A. Fleishman, E. F. Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," PERSONNEL PSYCHOLOGY, 15 (1962), pp. 43-56.

[4]E. A. Fleishman and D. R. Peters, "Interpersonal Values, Leadership Attitudes, and Managerial Success," PERSONNEL PSYCHOLOGY, 15 (1962) pp. 127-143.

[5]A. W. Halpin, "The Leadership Behavior and Combat Performance of Airplane Commanders," JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY, 49 (1954), pp. 19-22.

of factors in the follower as well as the leader. After examining 124 leadership studies conducted in both organizational and experimental settings, Stogdill concluded that "a person does not become a leader by virtue of some combination of traits, but the pattern of the personal characteristics of the leader must bear some relationship to the characteristics, activities, and goals of the followers."[1]

Whyte and Dalton[2] reported a study in which workers who shared the same management and the same first-level supervision responded quite differently to a piece-rate system. Some severely restricted production and some were "rate-busters."

Korman[3] gathered some of the most convincing evidence in support of the argument that effective leadership is dependent upon the situation. He found that both directive, task-oriented leaders and non-directive, human relations-oriented leaders are successful under some conditions, and with either leader behavior there was no significant predictive value in terms of effectiveness.

Whyte and Dalton[4] pointed to the importance of a subordinate's life history and his value system in influencing his expectations and his response to the behavior of his superior. They presented evidence

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[1]Ralph M. Stogdill, "Personal Factors Associated with Leadership: A Survey of the Literature," JOURNAL OF PSYCHOLOGY, XXV (1948), p. 70.

[2]William F. Whyte (Ed.), MONEY AND MOTIVATION (New York: Harper, 1955).

[3]A. K. Korman, "'Consideration,' 'Initiating Structure,' and 'Organizational Criteria' -- A Review," PERSONNEL PSYCHOLOGY: A JOURNAL OF APPLIED RESEARCH, Vol., 19, No. 4 (Winter, 1966), pp. 349-361.

[4]Whyte, op. cit.

to show that the difference between "restricter" and "rate-buster" behavior was due to a basic difference in underlying values between the two groups.

In a participative setting, Haythorn[1] found that group effectiveness varied with the personality traits of subordinates and leaders and with the compatibility of their personality traits. Tannenbaum and Allport[2] found similar results when studying the relationship between personality factors and an individual's preference for PDM or hierarchical decision making.

Smelser[3] studied different pairings of dominant and submissive males who interacted under various role assignment conditions. He observed that the joint achievement of the pairs in a cooperative problem solving situation was dependent upon the degree to which conditions permitted each member to utilize his habitual patterns of interpersonal behavior.

Compatibility

Schutz defined compatibility as being "a property of a relation between two or more persons, between an individual and a role, or between

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[1]W. Haythorn, "The Effects of Varying Combinations of Authoritarian and Equalitarian Leaders and Followers," JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY, 52 (1956), pp. 210-219.

[2]A. S. Tannenbaum and F. H. Allport, "Personality Structure and Group Structure: An Interpretive Study of Their Relationship Through Event-Structure Hypothesis," JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY, 53 (1956), pp. 272-280.

[3]W. T. Smelser, "Dominance as a Factor in Achievement and Perception in Cooperative Problem Solving Interactions," in W. T. Smelser (Ed.), PERSONALITY AND SOCIAL SYSTEMS (New York: John Wiley and Sons, Inc., 1963), pp. 531-540.

an individual and a task situation, that leads to mutual satisfaction of interpersonal needs and harmonious coexistence."[1] Compatibility does not necessarily imply liking. It is possible that liking and compatibility are linked, but it is also possible to recognize humans who work well together without any particular liking involved, and examples where individuals like each other but do not work effectively together.

Schutz suggested that the dominant reason for a group's effectiveness depends on the extent to which the members can get along together. "The more energy a group expends on interpersonal problems arising from lack of compatibility the less energy they devote to the task at hand."[2]

In response to these intuitions, Schutz developed a formal theory of interpersonal behavior[3] to determine their validity. The theory was based upon a postulate of interpersonal needs which stated that:

> (a) Every individual has three interpersonal needs: inclusion, control, and affection.
>
> (b) Inclusion, control, and affection constitute a sufficient set of areas of interpersonal behavior for the prediction and explanation of interpersonal phenomena.[4]

The interpersonal need for inclusion was defined behaviorally as "the need to establish and maintain a satisfactory relation with people

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[1]W. C. Schutz, THE INTERPERSONAL UNDERWORLD (a reprint edition of FIRO: A THREE-DIMENSIONAL THEORY OF INTERPERSONAL BEHAVIOR, Science & Behavior Books, Inc., Palo Alto, California, 1970), pp. 105, 192.

[2]W. C. Schutz, "What Makes Groups Productive?" HUMAN RELATIONS, 8 (1955), p. 429.

[3]W. C. Schutz, THE INTERPERSONAL UNDERWORLD, loc. cit., pp. 13-33.

[4]Ibid., p. 13.

with respect to interaction and association;"[1] the interpersonal need for control was defined behaviorally as "the need to establish and maintain a satisfactory relation with people with respect to control and power;"[2] the interpersonal need for affection was defined behaviorally as "the need to establish and maintain a satisfactory relation with others with respect to love and affection."[3]

Compatibility of two or more persons was theorized to depend on:

(a) Their ability to satisfy reciprocally each others interpersonal needs.

(b) Their complementarity with respect to originating and receiving behavior in each need area.

(c) Their similarity with respect to the amount of interchange they desire with other people in each need area.[4]

Within this framework of this theory, Schutz was able to develop a self-report instrument which measures an individual's orientation to these interpersonal needs. This questionnaire, the FIRO-B (Fundamental Interpersonal Relations Orientation - Behavior) was designed not only to measure how an individual characteristically relates to other people, but to predict relations between people on the basis of their individual personalities.

Schutz's theory and his FIRO-B represent an important contribution to the research for the formula of task group effectiveness. They provide

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[1]Ibid., p. 18.

[2]Ibid.

[3]Ibid., p. 19.

[4]Ibid., p. 200.

a means for determining leader-member and intra-group compatibility, a dimension whose importance has been repeatedly acknowledged by other scholars but which the review of the literature has not been tested empirically in real organizational settings.

Effectiveness

The general framework for measuring effectiveness was derived from the output variables developed by Hage in his Axiomatic Theory of Organizations.[1] Hage recognized that the formal characteristics of organizations generally consist of eight variables, four of which represent organizational ends. Although the variables were selected on an ad hoc basis, the works of Parsons, Bales, and their associates gave them theoretical justification.[2] The four measures developed by Hage and the indicators he suggested for quantifying them are illustrated in Figure 4.

Hage's indicators, however, were not entirely applicable to an IIC. Although his production variable was measurable in terms of the number of IIC tasks attained, it was integrated into a format which was adapted from Fleckenstein's Perceived Effectiveness Instrument.[3]

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[1]J. Hage, "An Axiomatic Theory of Organizations," ADMINISTRATIVE SCIENCE QUARTERLY, X (December, 1965), pp. 289-320.

[2]Ibid., pp. 291-292.

[3]D. Fleckenstein, "Role Conflict of University Computing Center Directors as Related to Computing Center Effectiveness," (unpublished Ph.D. dissertation, University of Wisconsin, 1972).

FIGURE 4

HAGE'S AXIOMATIC THEORY: OUTPUTS

(ORGANIZATIONAL ENDS)

Variables	Indicators
adaptiveness (flexibility)	Number of new programs in a year Number of new techniques in a year
production (effectiveness)	Number of units produced in a year Rate of increase in units produced in a year
efficiency (cost)	Cost per unit of output per year Amount of idle resources per year
job satisfaction (morale)	Satisfaction with working conditions Rate of turnover in job occupants per year

Note. — This figure was reproduced from Jerald Hage's "An Axiomatic Theory of Organizations," Administrative Science Quarterly, X (December, 1965), p. 293.

In summary, the general model for the study was composed of the three dimensions which the research findings revealed to be critical to the effectiveness of task groups. In the model, a principal's leader behavior dimensions of Initiation of Structure (IS) and Consideration (C) were conceived to be representative of the institutional mode of decision-making operations expected in the IIC. Leader-member compatibility represented the degree to which the IIC members' need-dispositions were met by this mode.

The utility of the model presented a striking contrast to the previously cited studies in which relationships were tested between effectiveness and leader behaviors or organizational modes of operation exclusively. It provided the means whereby the relationships between an interaction of these dimensions and IIC effectiveness could be tested.

By design, each IIC in the sample was conceptualized in one of the spatial octants on the basis of its high-low loadings on the three dimensions, and each of the octants was occupied by a cluster of IIC's. This permitted hypotheses to be tested with respect to the relationship to an IIC's octal location and its effectiveness.

This forced octal clustering facilitated the examination of interesting relationships between effectiveness and each IIC cluster. For example, effectiveness in an IIC characterized by high compatibility with a high IS and low C leader could be compared with that in an IIC characterized by high compatibility with a low IS and high C leader; or effectiveness could be compared simply between IIC's on the high and

low extremes of one dimension. The methodology for examining these relationships was an exact least squares analysis of variance.

Statement of the Hypotheses

The hypothesis tested in this study was:

(1) There is no significant multiple correlation between IIC effectiveness and the interrelationship of the IIC chairman's Initiation of Structure and Consideration behaviors, and IIC chairman-IIC member compatibility.

The ancillary hypotheses tested were:

(1) There is no significant relationship between IIC effectiveness and the percentage of an IIC's members that attended a Center workshop for multiunit school principals or unit leaders.

(2) There is no significant relationship between IIC effectiveness and the IIC's involvement in its prescribed decisions/tasks.

(3) There is no significant relationship between IIC effectiveness and the IIC chairman's, i.e., principal's, administrative experience.

(4) There is no significant relationship between IIC effectiveness and the number of hours the IIC meets each month.

Limitations of the Study

This study was limited by the following:

1. The sample was composed of multiunit elementary schools:

(a) in their second year of multiunit operations;

(b) that were completely unitized;

(c) that had a formally designated unit leader for each unit; and

(d) whose principal had been in that position from the time the school adopted the multiunit organizational mode.

2. All results of the study are predicated on the assumption that the data reflect truthfulness in the subjects' responses.

3. Causality cannot be inferred from any relationship found in the study.

Overview of the Study

This chapter included the nature of the study, the development of a model for describing the factors which interact to the benefit or detriment of task groups, the background literature which supported the construct dimensions of the model, statements of hypotheses, and the limitations of the study. In Chapter II, the design of the study is described. Chapter III includes a description of the data analysis and findings. In Chapter IV, a summary of the findings, conclusions, and implications for further research and practice are presented.

CHAPTER II

DESIGN AND METHODOLOGY

This chapter includes descriptions of the study's methodology and the statistical design for analyzing the data. The chapter is composed of five sections which consider, respectively, the development of the survey instruments, a definition of the study population and a description of the procedures for sample selection, a description of the procedure for data collection, and the statistical techniques employed.

Description of the Survey Instrument

As noted in Chapter I, task group effectiveness was theorized to be dependent upon the interrelated effects of leader behavior and the compatibility of leader and member personalities. The instrument developed and/or adapted for this investigation consisted of five parts: Preface -- "Background Data;" Section I -- "FIRO-B" (the Fundamental Interpersonal Relations Orientation-Behavior Questionnaire); Section II -- "Decision Involvement" (the actual involvement of the IIC in its prescribed decision tasks); Section III -- "Leader Behavior Description" (the Leader Behavior Description Questionnaire - Form XII with modification); and Section IV -- "Instructional Improvement Committee Effectiveness" (the perceived effectiveness based on Hage's output variables). Each of the sections was introduced with the directions

necessary for insuring proper response procedures. An introductory letter and "Purpose of the Instrument" cover sheet were integral parts of communicating the study's intent to the respondents (see Appendix A).

Members of several groups, as well as individuals in each school, were asked to respond to different sections of the instrument. The groups or individuals and the sections to which each responded are illustrated in Table 1. An X in the table indicates the sections which individuals in each respondent category were requested to complete.

TABLE 1

INSTRUMENT SECTIONS AND RESPONDENT PAIRINGS

	Instrument Sections				
Respondent	Background Data	FIRO-B	Decision Involvement	LBDQ	IIC Effectiveness
Principal	X	X	X		X
Other IIC Members	X	X	X	X	X
Instructional Staff and Aides -- Not Members of the IIC			X		X

As a preface to the four subsequent sections, thirteen personal and situational questions elicited "facts," not perceptions, from principals and other IIC members. Included in this short prefatory section of the instrument were questions to determine job classification, sex, professional experience and preparation, attendance at multiunit school conferences, unit leader selection procedures, and district salary differentials accorded to unit leaders.

The background portion of the instrument was accepted as having face validity. The selected items or questions were included on the basis of their presumed descriptive value to the study. Responses to these personal and situational questions indicated that this part of the instrument was unambiguous and did extract the information sought.

FIRO-B

FIRO-B was the basic tool used to measure leader-member compatibility in the IIC. Permission to use FIRO-B was granted to the investigator by Consulting Psychologists Press, which holds the copyright for the instrument (see Appendix B). The acronym FIRO-B stands for Fundamental Interpersonal Relations Orientation-Behavior.[1] "FIRO" represents the trait being measured; i.e., how an individual characteristically relates to other people, and "B" stands for the attribute of personality being explored -- behavior.

The purposes of FIRO-B are: (1) to measure how an individual acts in interpersonal situations; and (2) to predict interaction between people. In this second regard, FIRO-B is unique in that it not only measures individual characteristics, but the characteristics may be combined to predict relations between people. FIRO-B measures how a person behaves rather than how he feels; what behavior the individual expresses toward others (e) and how he wants others to behave toward him (w). The fit between what one wants and what others express gives information about compatible relationships.

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[1]Schutz, op. cit., pp. 57-80.

As described in Chapter I, Schutz defined the existence of three fundamental interpersonal dimensions; Inclusion (I), Control (C), and Affection (A). FIRO-B is designed to measure an individual's behavior toward others (e) and the behavior he wants from others (w) in these three areas of interpersonal interaction. The measure, therefore, encompasses six scales: expressed inclusion behavior (e^I), wanted inclusion behavior (w^I), expressed control behavior (e^C), wanted control behavior (w^C), expressed affection behavior (e^A), and wanted affection behavior (w^A).

The reliability of FIRO-B was determined via both a coefficient of internal consistency and a coefficient of stability for each of the six subscales.[1] The coefficients of internal consistency, for each of the scales, i.e., the degree to which the test items measured the same things, were all above .93 for over 1000 respondents. Since FIRO-B is composed of Guttman scales, these coefficients are well above the .90 which Guttman set as the minimum necessary for a series of items to be regarded as approximately a perfect scale.[2] The coefficient of stability for each of the subscales, i.e., the degree to which respondent measures remained unchanged on a test-retest with a month's time lapse, exceeded .71. The mean coefficient of the six scales was .76. A full explanation of the analyses of both coefficients are found in Schutz.[3]

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[1]Ibid., pp. 77-80.

[2]L. Guttman, "The Basis for Scalogram Analysis," in S. A. Stouffer, et al., MEASUREMENT AND PREDICTION (Princeton, New Jersey: Princeton University Press, 1950), pp. 60-90.

[3]Schutz, op. cit., pp. 77-80.

The validity of FIRO-B was established both within the theory underlying the FIRO scales and in studies which demonstrated differences between already existent groups and people with already known attitudes. The content validity of FIRO-B lies in its use of Guttman scales if the assumption is accepted that content validity is a property of all legitimate cumulative scales.[1] The concurrent validity of FIRO-B, that is, how well its scores correspond to measures of concurrent criterion performance or statuses, has been verified in both practical and experimental settings. The reader is referred to Schutz for more detailed information.[2]

The definition of leader-member compatibility is a criterion that is met by describing compatibility in mathematical terms based on the scale scores derived from FIRO-B. Schutz defined several types of compatibility and described a method of combining them to obtain a summary measure. The types of compatibility can be understood best by considering Figure 5.

Two types of compatibility can be explained by considering the diagonals of the diagram. The high-interchange quadrant represents those individuals who prefer a great deal of exchange of the "commodity" (e.g., interaction, power, love) relevant to the area. The low-interchange quadrant includes those people who wish to avoid exchange of the appropriate commodity, those who neither initiate nor want to receive inclusion, control or affection. To be compatible, two people should be

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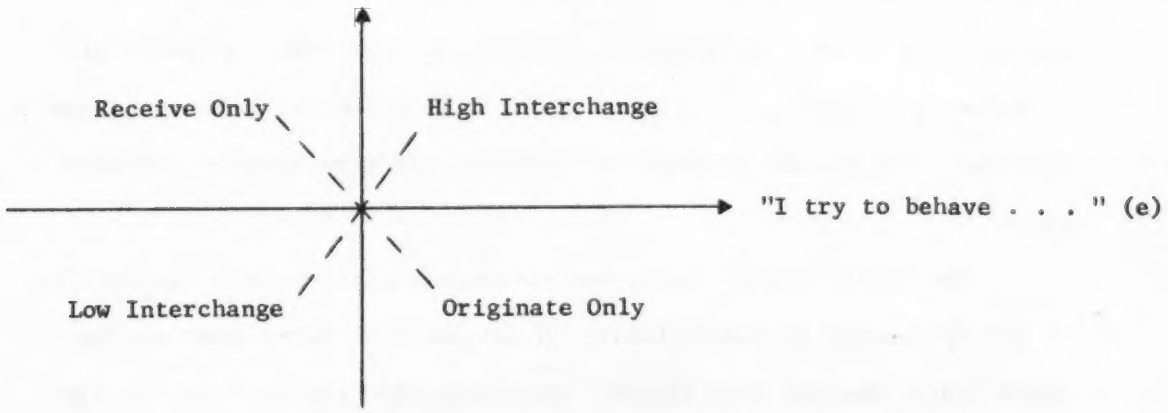
[1]Guttman, op. cit.

[2]Schutz, pp. 66-77.

FIGURE 5

GENERAL SCHEMA FOR INTERPERSONAL
BEHAVIOR MEASURED BY FIRO-B



Note. — This figure was reproduced from a book by W. C. Schutz, THE INTERPERSONAL WORLD (A reprint edition of FIRO: A THREE-DIMENSIONAL THEORY OF INTERPERSONAL BEHAVIOR, Science & Behavior Books, Inc., Palo Alto, California, 1970), p. 107.

similar with respect to the interchange variable. Compatibility based on similarity along this diagonal is called <u>interchange compatibility</u> and is symbolized as xK.

In the three need areas, interchange compatibility means:

1. In the area of inclusion, people must agree on how involved they like to become with other persons, varying from always with others to always alone.

2. In the area of control, people must agree on how much of an authority structure they will operate under, varying from entirely structured to entirely unstructured.

3. In the area of affection, people must agree on the same degree of closeness of personal feelings, of expression of confidence, and so forth, varying from close and intimate to very cool and distant.[1]

Interchange incompatibility arises when members of a dyad disagree on the amount of interchange in a particular area of interpersonal relations. Specifically,

1. In inclusion, the conflict is between the joiner and participator who always likes to do things "together" (high interchange) and the withdrawn person who prefers to be by himself (low interchange). The introvert-extrovert distinction is relevant here. (xK^I)

2. In control, the conflict is between the conformist and the rebel. The one who wants to follow the rules from above and enforce the rules below (high interchange), with the one who wants to do neither (low interchange). The former is very much like the authoritarian, while the latter resembles the anarchist. (xK^C)

3. In affection, the conflict is between the affectionate, expressive person who likes others to be the same (high interchange) and the more reserved, distant individual who prefers that others keep their emotional distance (low interchange). It occurs when one person likes to be personal, intimate, and confiding, while the other does not want to discuss personal matters. (xK^A)[2]

Interchange compatibility may be indicated quantitatively by letting e_i and e_j represent the score on the expressed behavior ("I try to act toward others") for the principal/IIC chairman (i) and the IIC member (j)

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[1]Schutz, p. 111.

[2]Ibid.

in the dyad, respectively; and w_i and w_j, the score of the behavior wanted from others ("I like other people to act toward me . . . "), by the two members of the dyad.

Since the more similar two persons' scores are on this diagonal the more compatible the persons are, interchange compatibility in each need area is measured by the differences between the amount of interchange two individuals desire. This is determined by subtracting the combined scores of how the principal/IIC chairman (i) likes to be acted toward (w_i) and how he likes to act toward others (e_i), i.e., ($e_i + w_i$) by the combined scores of the IIC members' e_j and w_j; i.e., ($e_j + w_j$). Further, since the direction of the difference between the principal's and the IIC members' scores is not important, the absolute value of the difference is sufficient. Hence, the interchange compatibility of persons i and j is given for each need area by

$$xK^{I}_{ij} = \left|(e_i^{I} + w_i^{I}) - (e_j^{I} + w_j^{I})\right|$$

$$xK^{C}_{ij} = \left|(e_i^{C} + w_i^{C}) - (e_j^{C} + w_j^{C})\right|$$

$$xK^{A}_{ij} = \left|(e_i^{A} + w_i^{A}) - (e_j^{A} + w_j^{A})\right|$$ [1]

The smaller the descrepancy between each pair of scores is interpreted as indicating greater interchange compatibility.

The other diagonal illustrates the difference between those people who desire only to initiate or originate behavior and those who only wish to receive it. In order to be compatible along this diagonal, two

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[1]Schutz, p. 112.

people should complement each other; they should be equidistant from the center in opposite directions. This type of compatibility is called originator compatibility and is symbolized as oK.

Originator compatibility in each area occurs when

1. People who very actively initiate group activities work well with those who want to be included in such activities (inclusion).
2. Those who wish to dominate and control the activities of others work well with those who want to be controlled (control).
3. Those who wish to give affection work well with those who want to receive affection (affection).[1]

Originator conflict occurs when there is a disagreement regarding preference of who shall originate relations and who shall receive them. There are two types of originator conflict for each need area (inclusion, control, and affection): between two originators, competitive originator incompatibility, and between two receivers, apathetic originator incompatibility.

1. In the inclusion area, the competitive conflict is between two persons each of whom wants to "select his own company." Each wants only to join the activities he wishes but not to have others join him. The apathetic conflict is between two persons; both want to be included, but neither will act to join the other. (oK^I)
2. In the control area, the competitive conflict is between two persons each of whom wants to be dominant and run the activities but does not want to be told what to do. This situation is exemplified by the familiar power struggle. The apathetic conflict in this area is between two submissive people each of whom wants to be told what to do but neither of whom will take

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[1]Schutz, p. 109.

the initiative in doing it. This situation arises with a boss who cannot make decisions and an employee with no "initiative." (oK^C)

3. In the affection area, the competitive conflict is between two who desire to originate close relations but not to receive them. An example of this is the Don Juan for whom the pursuit is an end in itself and reciprocation is threatening. The apathetic conflict is between two who want to be liked but do not want to initiate it. An example is the two coworkers secretly fond of each other but neither ever initiating a personal relation. (oK^A)[1]

A measure of originator compatibility (oK) is obtained by determining an individual's degree of preference for initiating and not receiving. The simplest measure of this preference is the difference between the expressed and wanted aspects of a given need area, that is $(e_i - w_i)$.

Highest compatibility between two persons occurs when their scores are complementary. Complementarity of two scores for each need area is measured by adding the two originator scores of the dyadic pair using the following formulas:

$$oK^I_{ij} = (e_i^I - w_i^I) + (e_j^I - w_j^I)$$

$$oK^C_{ij} = (e_i^C - w_j^C) + (e_j^C - w_j^C)$$

$$oK^A_{ij} = (e_i^A - w_i^A) + (e_j^A - w_j^A)$$[2]

If two persons are exactly complementary, that is, have the same value with opposite signs, their score will add to zero. A positive sum

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[1]Schutz, p. 109.

[2]Ibid, p. 110.

for both scores indicates that both persons prefer to originate rather than receive, reflecting competitive incompatibility. If both prefer receiving, the sum of their scores will be negative, indicating apathetic incompatibility.

A third measure of compatibility is derived from the major axes. Based on the assumption that the expressed behavior of one person must equal the wanted behavior of the other, this compatibility is called reciprocal compatibility and is symbolized as rK.

Reciprocal compatibility is a measure to determine how well the needs of each member of the IIC leader/IIC member dyad are met by the other members. A comparison is made between the way the principal/IIC chairman (i) likes to be acted toward (w_i) and the way the IIC member (j) likes to act toward others (e_j), and similarly between w_j and e_j. Hence, a measure of reciprocal compatibility of persons i and j is given for each need area by

$$rK^{I}_{ij} = \left|e_i^{I} - w_j^{I}\right| + \left|e_j^{I} - w_i^{I}\right|$$

$$rK^{C}_{ij} = \left|e_i^{C} - w_j^{C}\right| + \left|e_j^{C} - w_i^{C}\right|$$

$$rK^{A}_{ij} = \left|e_i^{A} - w_j^{A}\right| + \left|e_j^{A} - w_i^{A}\right|^{1}$$

Absolute measures are used, since the main concern is with the size rather than with the direction of the differences. The smaller the discrepancy between each pair of scores in each need area compatibility, the better will each person satisfy the needs of the other.

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[1]Schutz, p. 108.

Within these constructs of compatibility, each individual is described in terms of his desiring a certain relationship between himself and others in each need area.[1] In other words, they describe relationships between the certain way a person wants to act toward others, and the certain way that he wants others to act toward him. By comparing the IIC members' description of how they like others to act toward them with the principal's (the leader) description of how he likes to act toward people, and vice versa, a measure of mutual need satisfaction is obtained.

In the formulation of the formulas for these types of compatibility two details should be noted: (1) the subscript (i) represents the principal/IIC chairman and the subscript (j) represents the IIC members; (2) since for each measure of compatibility a low score means high compatibility, the formulas actually give a direct measure of incompatibility. Therefore, when the scores obtained from these formulas were utilized for correlational and multiple correlational analyses, the inverse relationship existent between scores and compatibility was corrected by subtracting the scores from 18, the maximum score possible for each of the formulas.

Composite measures of compatibility are obtainable across need areas and types of compatibility. For example, all measures of compatibility in the affection area may be combined to obtain a general measure of affection compatibility, which is symbolized, K^A, and calculated with the following formula:

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[1]Ibid., pp. 105-151.

$$K^A = \Sigma\left[\left|rK^A\right| + \left|oK^A\right| + \left|xK^A\right|\right]$$

As an example of a measure for a type of compatibility, all measures of the interchange type of compatibility may be confined to obtain a general measure of interchange compatibility, which is symbolized, xK, and calculated with the following formula:

$$xK = \Sigma\left[\left|xK^I\right| + \left|xK^C\right| + \left|xK^I\right|\right]$$

To summarize all types of compatibility and their relations to one another, it is helpful to present them in the matrix form shown in Table 2.

TABLE 2

RELATIONS BETWEEN COMPATIBILITY MEASURES

		AREAS OF COMPATIBILITY			
		I	C	A	Row Sums
TYPES OF	r	rK^I	rK^C	rK^A	rK
COMPATI-	o	oK^I	oK^C	oK^A	oK
BILITY	x	xK^I	xK^C	xK^A	xK
Column Sums		$_IK^I$	$_CK^C$	$_AK^A$	K Total

Note. — This table was reproduced from a book by W. C. Schutz, THE INTERPERSONAL WORLD (A reprint edition of FIRO: A THREE-DIMENSIONAL THEORY OF INTERPERSONAL BEHAVIOR, Science & Behavior Books, Inc., Palo Alto, California, 1970), p. 115.

The sum of rows defines rK, oK, and xK, while the sum of columns defines K^I, K^C, and K^A. Both the sum of rows and the sum of columns add to K, total compatibility. Although K is a mathematically equivalent to the sum of either the area compatibility or the compatibility type, the definition of K has psychological differences when viewed as the sum of one or the other and must be interpreted accordingly.

Decision Involvement

The Decision Involvement section provided data for determining the quantitative measure of IIC effectiveness. It consists of fourteen decision items, with the same four-point involvement response scale for each item. The building principal, other IIC members, and the instructional staff of each school rated the level of IIC involvement for each decision item using four choices: "made the decision," "recommended the decision," "provided and/or gathered information regarding the decision," and "no involvement." These qualitative terms were quantified with a score of "3" for "made the decision" while at the other end of the scale, "no involvement" was scored "0." The items in this section are modified statements of the decision responsibilities prescribed for the IIC by the "inventors" of the multiunit elementary school.[1]

The Decision Involvement section was accepted as having face validity. This was accomplished by interacting with Center and experienced multiunit elementary school personnel to insure that the clarity, content, and construction of each item closely corresponded to the

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[1]Klausmeier, et al., op. cit., pp. 97-126.

prescriptions appearing in Klausmeier, et al.[1] PROGRAM TSTAT,[2] a computer program written by the Wisconsin Information Systems for Education, calculated an alpha coefficient for a test-retest check of reliability of the Decision Involvement section from a sample of 33 multiunit school personnel. It revealed the level of internal consistency to be .9181. Spuck[3] has indicated that alpha coefficients below .50 are of questionable reliability; those between .50 and .70 have sufficient reliability for early stages of research; and those above .70 have a high degree of reliability. The reliability level obtained for this instrument exceeded the level Spuck considered adequate with regard to an instrument's internal consistency.

Instructional Improvement Committee Effectiveness

The study's independent variable, Effectiveness, was measured in terms of the Adaptiveness, Production, Efficiency, and Job Satisfaction perceived of and in an IIC by the instructional and administrative staff of each school.

The four statements developed for measuring perceived IIC Effectiveness are modifications of Hage's definitions of the four axiomatic variables which were illustrated in Figure 4. The modifications related the statements specifically to the IIC. The statements were as follows:

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[1]Ibid.

[2]Dennis Spuck, PROGRAM TSTAT (Madison, Wisconsin: University of Wisconsin, Wisconsin Information Systems for Education, 1971).

[3]Dennis Spuck, TECHNICAL REPORT: ITEM ANALYSIS AND RELIABILITY ASSESSMENT OF SCHOOL SENTIMENT INDEX (Madison, Wisconsin: University of Wisconsin, 1971).

Adaptiveness: Flexibility; the adoption of new procedures and practices that were uniquely needed for your school.

Production: The number of plans, procedures, and services the IIC has provided for your school.

Efficiency: The amount of production relative to the time devoted to IIC meetings.

Job Satisfaction: The satisfaction, or morale, of IIC members.

A five point, Likert-type scale was selected for respondent rating of the four effectiveness categories. The scale was prefaced by the statement, "The degree of this measure for our IIC is," and the choices were: "very low," "low," "moderate," "high," and "very high."

The reliability of this section was also determined using PROGRAM TSTAT and the responses from a pilot sample of thirty-three multiunit school personnel. An alpha coefficient of .8929 was obtained, which is considered adequate.

The items were considered to have face and content validity, since their wording is almost identical to Hage's definition of the variables.

The method used in developing an IIC Effectiveness score consisted of three steps. The first step was simply to determine the mean respondent ratings for the four effectiveness categories for each IIC.

The second step represented a means whereby the decision involvement of each IIC in its prescribed tasks could be accounted for in the perceived Production and Efficiency mean scores. Because the perceived Production and Efficiency ratings may represent a rater's perception of the IIC's overall production and efficiency, it was considered essential that these two categories be weighted in favor of the IIC's decision

involvement in its prototypically prescribed tasks. Two reasons prompted the use of this weighting scheme.

First, the researcher considered measuring Production and Efficiency exclusively with either the respondent ratings or the IIC decision involvement score. Recognizable advantages and disadvantages accompany the use of either approach exclusively. As a measure of an IIC's overall production, the perceived Production measure may or may not reflect IIC production relative to its prescribed tasks. On the other hand, to measure IIC production exclusively in terms of its involvement in the prescribed decision tasks would overlook two important considerations: (1) the IIC's involvement in decision matters other than its prescribed tasks may be just as important to the successful operation of the school, and (2) the writings of Terreberry[1] and Emery and Trist[2] note the constraints and priorities imposed upon building level decision making by both the larger organizational structure in which the school operates, the school district, and the causal effects of the total environment.

Following these considerations, the two techniques were combined. Each IIC's mean decision involvement score was standardized from the frequency distribution of all IIC decision involvement scores across all respondents in all schools. The mean Production score of each school was weighted by adding the IIC's standardized decision

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[1]Shirley Terreberry, "The Evolution of Organizational Environments," Administrative Science Quarterly, Vol. 12, No. 4 (March 1968), pp. 590-613.

[2]F. E. Emery and E. L. Trist, "The Causal Texture of Organizational Environments," Human Relations, 18 (1965), pp. 21-31.

involvement score to it. The mean Efficiency score for each IIC was weighted in a similar manner. A ratio of decision involvement to the mean number of IIC meeting hours per month was calculated for each IIC and standardized relative to the ratios obtained for all IIC's. The mean Efficiency score of each IIC was then weighted by adding to it the IIC's standardized ratio score. A complete description of these procedures appears as Appendix D.

The third and final step in determining IIC Effectiveness was to sum the mean Adaptibility and Job Satisfaction scores and the weighted Production and Efficiency scores for each school; this sum represented the composite measure of IIC Effectiveness.

Leader Behavior Description

The Leader Behavior Description Questionnaire - Form XII (LBDQ) was the basic data source for determining the description of a principal's leader behavior in the IIC. Each member of the IIC, with the exception of the principal, responded to this instrument. It consisted of 100 items and the same five-point response scale was employed for each item.

The LBDQ, which grew out of work initiated by Hemphill,[1] was developed for use in obtaining descriptions of a supervisor by the group members whom he supervises. The development of the scales by the staff of the Ohio State Leadership Studies is described more fully

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[1]John K. Hemphill, SITUATIONAL FACTORS IN LEADERSHIP (Columbus: The Ohio State University, Bureau of Educational Research, Monograph No. 32, 1949).

by Hemphill and Coons.[1] Shartle[2] has outlined the theoretical considerations underlying this descriptive method.

Form XII represents the fourth and most recent revision of the questionnaire. The two dimensions of Initiating Structure (or Initiation of Structure) and Consideration, which comprised the earlier forms, are augmented by ten additional subscales developed from new factors suggested by both theory and empirical research.[3] The hypothesized subscales are twelve in number and each subscale is composed of either five or ten items. Each subscale is defined by its component items and represents a complex pattern of behavior. Brief definitions of, and the number of items in, each subscale are as follows:

1. Representation - speaks and acts as the representative of the group. (5 items)
2. Demand Reconciliation - reconciles conflicting demands and reduces disorder to system. (5 items)
3. Tolerance of Uncertainty - is able to tolerate uncertainty and postponement without anxiety or upset. (10 items)
4. Persuasiveness - uses persuasion and argument effectively; exhibits strong convictions. (10 items)

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[1]J. K. Hemphill and A. E. Coons, "Development of the Leader Behavior Description Questionnaire," in Ralph M. Stogdill and Alvin E. Coons (Eds.), LEADER BEHAVIOR: ITS DESCRIPTION AND MEASURE (Columbus: The Ohio State University, Bureau of Business Research, Monograph No. 88, 1957), pp. 7-38.

[2]Carroll L. Shartle, "Introduction," in Ralph M. Stogdill and Alvin E. Coons (Eds.), LEADER BEHAVIOR: ITS DESCRIPTION AND MEASUREMENT (Columbus: The Ohio State University, Bureau of Business Research, Monograph No. 88, 1957), pp. 1-5.

[3]Ralph M. Stogdill, INDIVIDUAL BEHAVIOR AND GROUP ACHIEVEMENT (New York: Oxford University Press, 1959).

5. Initiation of Structure - clearly defines own role, and lets followers know what is expected. (10 items)

6. Tolerance of Freedom - allows followers scope for initiative, decision, and action. (10 items)

7. Role Assumption - actively exercises the leadership role rather than surrendering leadership to others. (10 items)

8. Consideration - regards the comfort, well being, status, and contributions of followers. (10 items)

9. Production Emphasis - applies pressure for productive output. (10 items)

10. Predictive Accuracy - exhibits foresight and ability to predict outcomes accurately. (5 items)

11. Integration - maintains a closely knit organization; resolves intermember conflicts. (5 items)

12. Superior Orientation - maintains cordial relations with superiors; has influence with them; is striving for higher status. (10 items)[1]

Stogdill and Shartle[2] determined subscale reliability by using a modified Kuder-Richardson formula; each item was correlated with the remainder of the items in its subscale rather than with the subscale score including the item. All of the test-retest correlations and most of the odd-even correlations were above .50.

For this study, the wording of the items of the Ohio State LBDQ - Form XII was slightly altered. A sample item from the instrument read

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[1]Ralph M. Stogdill, MANUAL FOR THE LEADER BEHAVIOR DESCRIPTION QUESTIONNAIRE - FORM XII (Columbus: The Ohio State University, Bureau of Business Research, 1963), p. 3.

[2]Ralph M. Stogdill and Carroll L. Shartle, METHODS IN THE STUDY OF ADMINISTRATIVE LEADERSHIP (Columbus: The Ohio State University, Bureau of Business Research, 1955), p. 57.

as follows: "He acts as the spokesman of the group." This was altered to read: "My principal acts as the spokesman of the IIC." These modifications were deemed desirable in order better to direct respondent attention specifically to the principal's behavior in the IIC. Each item was accompanied by a five-point, Likert-type scale for rating the principal's behavior. The choices were: (5) "My principal always acts this way," (4) "My principal often acts this way," (3) "My principal occasionally acts this way," (2) "My principal seldom acts this way," and (1) "My principal never acts this way." Since the response scale was in qualitative terms, the five responses were quantified with a score of "5" for an "always" response while at the other end of the scale, a "never" response was scored "1."

Because twelve dimensions are obtained from the 100 items in the LBDQ - Form XII, reducing the number of variables to a more manageable number was considered desirable. Factor analysis is the statistical method by which the twelve possible variables can be grouped into the fewest possible single influences. The principal components analysis is used for determining that linear combination which accounts for the greatest variability in the population.[1] An intercorrelation matrix was obtained and analyzed to describe a reduced matrix of loadings on the major factors of leader behavior. This analysis was performed

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[1]Maurice M. Tatsuoka and David V. Tiedeman, "Statistics as an Aspect of Scientific Method in Research on Teaching," in HANDBOOK OF RESEARCH ON TEACHING, ed., by W. L. Gage (Chicago: Rand McNally & Co., 1963), p. 153.

by PROGRAM BIGFACT, a fully supported statistical program available at the Wisconsin Information Systems for Education.[1]

Population, Definition, and Sample Selection

The population of multiunit elementary schools from which the study's sample was drawn was composed of schools which had implemented this mode of organizational operations as early as 1965 and as recently as 1971. The earliest schools to implement this mode did so under the aegis of the Center and were considered experimental schools. Based on observations in, and recommendations from, these early multiunit schools, Klausmeier, et al., and the Institute for the Development of Educational Activities, an affiliate of the Kettering Foundation, prepared multimedia implementation and inservice materials for schools which subsequently became multiunit elementary schools.

The primary selection criterion for the sample was to include only those multiunit elementary schools which implemented this mode in September, 1970. This specific implementation date was selected because it marked the first time that the implementation in each school was accomplished with the support of a common set of inservice materials. This date was also selected because it permitted the study to be conducted in schools which had at least one and one-half years in which to resolve most of the difficulties encountered when the school's operations were initially restructured. Additional selection criterion were:

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[1]Dennis W. Spuck and Donald N. McIsaac, Jr., PROGRAM BIGFACT (Madison, Wisconsin: The University of Wisconsin, Wisconsin Information Systems for Education, 1971).

to include only those schools which had adopted the mode on a school-wide basis; and those where the principal had occupied that position since the September, 1970, implementation. These additional criteria were considered necessary to assure the existence of an IIC with school-wide membership and to allow patterns of interpersonal interaction between the IIC members to become established.

The names and addresses of the schools which conformed to these criteria were obtained from the 1971-72 IGE/Multiunit Elementary Schools Directory.[1] Initial contact with each sample school was made through the chief officer of the district in which each school was located (see Appendix C). This formality was employed to determine receptivity to participation in the study. A total of thirty-six schools from twenty-two districts agreed to participate; ten schools from five Colorado school districts and twenty-six schools from seventeen Wisconsin school districts. Those sample schools which elected not to participate did so for the most part because they either felt the questionnaire would interfere with the school's daily operations or because they could not see how the study would benefit them directly. Ultimately, nine schools from five districts in Colorado and twenty-two schools from seventeen districts in Wisconsin returned completed instruments. These 31 schools represent 86 percent of the thirty-six sample schools.

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[1]1971-72 DIRECTORY OF IGE/MULTIUNIT ELEMENTARY SCHOOLS (Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1971).

Procedures for Data Collection

Within each sample school different segments of the instructional and administrative staff responded to different sections of the questionnaire (see Table 1). The data collection was comprised of two phases. In the first phase, the preface and first three sections were mailed to each school for distribution among the appropriate respondents. Upon receipt from each school of the responses to the first phase, the second phase, consisting of Section IV, was mailed. The purposes for utilizing two phases were: the length of the instrumentation assembled for each school's principal and IIC membership suggested the appropriateness of separating the data collection into two less time-consuming phases; and the researcher considered it desirable for the effectiveness measures to be assessed independently.

Instrument Summary and Statistical Techniques Employed

In summary, the foregoing questionnaire, consisting of a preface and four sections, was employed. A discussion of each instrument, its reliability and validity, and its application to the study has been provided. A number of assumptions and operational definitions were noted in the discussion in order to specify the meaning and parameters of the variables to be examined. In general, the subtests in each section were designed to elicit perceptions of (1) interpersonal behavior as they relate to leader-member compatibility, (2) leader behavior, and (3) IIC Effectiveness. Based upon the evidence presented in these

discussions, the subtests are appropriate and reliable measures of those perceptions.

The statistical method utilized to test the major hypothesis of this study was multiple regression as described by Draper and Smith.[1] This method provides a procedure to determine the strength of the relationship between the three independent variables, i.e., the two leader dimensions of Initiation of Structure and Consideration and leader-member compatibility, and the dependent variable, IIC Effectiveness.

A stepwise regression procedure[2] was used to determine the relative contribution each of the independent variables made in explaining the dependent variable. This analysis was performed by computer program STEPREG 1,[3] a fully supported statistical program in the STATJOB series of programs available at the Madison Academic Computing Center (MACC) at the University of Wisconsin. The program was processed on the Univac 1108 computer at the MACC.

The relationship proposed in each of the ancillary hypotheses was tested using a Pearson product-moment correlation coefficient which provides a procedure and an index for testing the strength of the correlation between the two variables in each of the hypotheses. This

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[1]N. R. Draper and H. Smith, APPLIED REGRESSION ANALYSIS (New York: John Wiley & Sons, Inc., 1966), pp. 104-115.

[2]Ibid., pp. 171-172.

[3]STATISTICAL PROGRAM DIRECTORY (Madison, Wisconsin: The University of Wisconsin Computing Center, November 1970).

analysis was performed by computer program PROGRAM WISE*ISTAT.IDISTX.[1] The .05 level of confidence was used to test the statistical significance of the correlations.

[1]Donald N. McIsaac, Jr., and Dennis Spuck, INTERACTIVE DESCRIPTIVE STATISTICS: PROGRAM WISE*ISTAT.IDISTX (Madison, Wisconsin: University of Wisconsin, Wisconsin Information Systems for Education, 1971).

CHAPTER III

ANALYSIS OF THE DATA

This chapter is composed of four sections. The first section consists of preliminary analyses of the data collected in the thirty-one participating schools. The second section describes the results of the multiple regression analysis used to test the major hypothesis comparing IIC effectiveness and the interrelationship of: the leader-member compatibility, and the IIC chairman's, or principal's, leader Initiation of Structure behavior and leader Consideration behavior. The third section describes the tests of the ancillary hypotheses. The fourth section describes the analyses used to determine the utility of the three-dimensional model of task groups as applied to the sample data collected.

Preliminary Analyses

Prior to the actual test of the stated hypotheses, five preliminary analyses of the data were made in order (1) to substantiate the utilization of (a) the weighting techniques applied to the mean Production and Efficiency scores, and (b) an Effectiveness measure composed of the sum of the four mean and weighted mean component scores; (2) to determine the reduced matrix of loadings on the major factors of leader behavior; (3) to determine the overall leader-member

compatibility measure for each IIC; and (4) to ascertain whether the assumptions underlying the use of a multiple linear regression analysis were fulfilled by the sample data.

IIC Effectiveness

An analysis of the components of IIC Effectiveness was made using PROGRAM DISTX,[1] a descriptive statistics program prepared by the Wisconsin Information Systems for Education. The program computed the mean and standard deviation of each subscale across all schools. It also computed a correlation matrix and the probabilities of obtaining a correlation purely by chance. The results obtained in these analyses appear in Table 3.

TABLE 3

INTERCORRELATIONS OF EFFECTIVENESS COMPONENTS -- PRODUCTION AND EFFICIENCY WEIGHTED

Name	Mean	S.D.	Adaptiveness	Production (Weighted)	Efficiency (Weighted)	Job Satisfaction
Adaptiveness	3.70	.54	1.0000 (.0000*)			
Production	3.27	1.06	.7206 (.0000*)	1.0000 (.0000*)		
Efficiency	3.33	1.21	.3623 (.0428*)	.5288 (.0025*)	1.0000 (.0000*)	
Job Satisfaction	3.52	.66	.7616 (.0000*)	.7264 (.0000*)	.4429 (.0121*)	1.0000 (.0000*)

* Significant at the .05 level

[1]Frederick P. Stofflet and David J. Fleckenstein, DESCRIPTIVE STATISTICS PACKAGE: PROGRAM DISTX (Madison, Wisconsin: University of Wisconsin, Wisconsin Information Systems for Education, 1971).

The relatively low correlations and associated high probability levels between the Efficiency subscale and the other three prompted the researcher to reassess the utilization of the weighting procedure for the Efficiency subscale (see Appendix D). A reanalysis was made of the intercorrelations calculated from the sample's distribution of unweighted mean Efficiency scores. A considerable improvement was observed in the correlation coefficients and their associated probability levels. The means, standard deviation, intercorrelations and probability levels obtained from this reanalysis appear in Table 4.

TABLE 4

INTERCORRELATIONS OF EFFECTIVENESS COMPONENTS -- PRODUCTION WEIGHTED

Name	Mean	S.D.	Adaptiveness	Production (Weighted)	Efficiency	Job Satisfaction
Adaptiveness	3.706	.536	1.0000 (.0000*)			
Production (Weighted)	3.272	1.059	.7206 (.0000*)	1.0000 (.0000*)		
Efficiency	3.321	.495	.8475 (.0000*)	.8537 (.0000*)	1.0000 (.0000*)	
Job Satisfaction	3.516	.656	.7617 (.0000*)	.7264 (.0000*)	.8035 (.0000*)	1.0000 (.0000*)

* Significant at the .05 level

As a result of these findings, the weighting procedure for the Efficiency measure was rejected in favor of using an unweighted mean Efficiency score.

Relative to the efficacy of assessing IIC Effectiveness on the basis of the combined sum of the three unweighted mean scores (Adaptiveness, Efficiency, and Job Satisfaction) and the weighted mean score for Production, the obtained high intercorrelations between the four subscales indicated that relatively equal representation of IIC Effectiveness could be achieved either by the separate use of any one of the four subscales or by using the combined sums of the means and weighted mean scores. The researcher arbitrarily chose the latter as originally intended.

Factor Analysis of LBDQ - Form XII Subscales

As outlined in the previous chapter, a factor analysis of the twelve LBDQ - Form XII subscales was performed by PROGRAM BIGFACT in order to group the subscales into the fewest possible single influences. Since the statement of the major hypothesis and the three-dimensional model of task groups was based on the expectation that the factor analysis would result in a clustering on the Initiation of Structure and Consideration subscales, considerable interest was attached to the results of this analysis. It should be reiterated that in this study the LBDQ - Form XII subscales represent an IIC chairman's leader behavior as perceived by each IIC's members. Furthermore, there is no "goodness" or "badness" associated with high or low subscale scores since there are no norms, as such, for the LBDQ - Form XII.

PROGRAM BIGFACT performed the factor analysis on the mean subscale scores obtained in each of the thirty-one schools. The computer

program first produced the means and standard deviations of the twelve subscales across all schools. These results appear in Table 5.

TABLE 5

MEANS AND STANDARD DEVIATIONS OF
LEADER BEHAVIOR SUBSCALE SCORES

Subscale	Mean	Standard Deviation
Representation	39.9000	4.4780
Demand Reconciliation	38.3012	2.7893
Tolerance of Uncertainty	37.2861	3.6743
Persuasiveness	36.5348	5.2111
Initiation of Structure	34.7103	4.5636
Tolerance of Freedom	38.5010	4.6528
Role Assumption	39.4465	4.5819
Consideration	40.2071	3.7096
Production Emphasis	29.2532	4.7139
Predictive Accuracy	36.9348	4.8420
Integration	38.8878	5.6240
Superior Orientation	34.4287	3.1987

The statistical significance of the difference between any of the leader behavior subscales was not determined. However, a limited analysis of relative scoring was undertaken with the recognition that the differences shown might be due to chance. Thus, a comparison of the sample's mean subscale scores with six earlier research efforts, is presented in Table 6.

TABLE 6

COMPARATIVE MEANS OF LEADER BEHAVIOR SUBSCALE SCORES*

Subscale	H.S. Prin. N=170	Corp. Staff Executive N=165	Comm. Ldrs. N=55	Corp. Pres. N=44	Labor Union President N=55	Coll. Pres. N=55	IIC Chmn. N=31	Row Avg.
1. Representation	39.6	39.6	39.2	41.0	44.4	42.8	39.9	40.9
2. Demand Reconciliation	39.9	38.4	39.4	41.2	43.0	--	38.3	40.0
3. Tolerance of Uncertainty	33.2	33.2	37.7	35.9	40.4	37.2	37.3	36.9
4. Persuasiveness	37.0	36.5	39.5	40.1	43.1	41.1	36.5	39.1
5. Initiation of Structure	38.3	36.6	37.2	38.5	38.3	37.7	34.7	34.7
6. Tolerance of Freedom	41.2	38.0	36.4	38.9	38.0	39.6	38.5	38.6
7. Role Assumption	40.1	40.9	39.8	42.7	43.3	43.5	39.4	41.3
8. Consideration	39.6	37.1	41.1	41.5	42.3	41.3	40.2	40.4
9. Production Emphasis	33.5	36.1	35.4	38.9	36.0	36.2	29.3	35.0
10. Predictive Accuracy	36.8	38.2	39.5	40.1	41.7	--	36.9	38.8
11. Integration	36.0	--	--	--	--	--	38.9	37.4
12. Superior Orientation	37.8	38.6	--	43.2	--	42.9	34.4	39.3
COLUMN AVERAGES	38.0	37.5	38.5	40.1	41.1	40.2	37.0	

* Data for previous studies adapted from Stogdill and Brown Research Reports

The previous studies focused on the leader behavior of high school principals in the province of Alberta, Canada, executives of an aircraft corporation engineering staff, leaders in community development activities in the state of Ohio, presidents of "successful" corporations, presidents of labor union locals, and presidents of colleges and universities. Column and row averages are also shown for their value in comparing the leader groups.

Reading down the columns, the highest mean scores accorded by others and/or arrived at through self-description are as follows:

High school principals - Tolerance of Freedom and Role Assumption

Corporation staff executives - Representation and Role Assumption

Community leaders - Consideration

Corporation presidents - Role Assumption, Superior Orientation, etc.

Labor union presidents - Representation, etc.

College presidents - Role Assumption, etc.

IIC chairman/MUS-E principals - Consideration and Representation

An examination of the row averages of the subscale means revealed the IIC chairmen/MUS-E principals to have scores above the average of the seven groups in Tolerance of Uncertainty and Integration. In regard to the column averages for all subscale means, IIC chairmen's scores were below the other six.

The Initiation of Structure and Consideration subscales results are particularly revealing. The means of these two leader behavior

subscales are shown in Table 7. On the basis of these mean scores, IIC chairmen received scores below the other six leader groups in the general area of defining their role clearly and letting IIC members know what is expected of them (Initiation of Structure). With respect to the Consideration subscale, the IIC chairmen received scores lower than four of the other groups and higher than two (high school principals and corporation staff executives). It should be noted, however, that special importance should not be accorded to these results since the magnitude of the mean differences was so slight.

TABLE 7

COMPARATIVE MEANS ON THE TWO LBDQ SUBSCALES
OF THE PRESENT STUDY AND SELECTED PAST STUDIES

Sample of Population	N	Initiation of Structure	Consideration
High School Principals	170	38.3	39.6
Corporation Staff Executives	165	36.6	37.1
Community Leaders	57	37.2	41.1
Corporation Presidents	55	38.5	41.5
Labor Union Presidents	44	38.3	42.5
College Presidents	55	37.7	41.3
IIC Chairmen/MUS-E Principals	31	34.7	40.2
AVERAGE		37.3	40.4

In all the comparisons, the mean scores on the Consideration subscale are higher than for the Initiation of Structure subscale. This

finding can be interpreted as indicating a slightly greater concern by all seven leader groups for individual and group welfare relative to organizational roles and goals. While the differences are admittedly slight, these subscale results are relevant to the major hypothesis and the three-dimensional model of task groups.

Following the program's calculation of subscale means and standard deviations a matrix of subscale intercorrelation was calculated. The intercorrelations appear in Table 8. The highest correlation (.817) in the matrix was between Demand Reconciliation (subscale 2) and Predictive Accuracy (subscale 10).

From the correlation matrix (R) PROGRAM BIGFACT performed a factor analysis and calculated the twelve roots (eigenvalues) of R which are listed in Table 9 along with the percent of variance attributable to each.

A sharp drop in the size of these values can be seen after the third root. The sum of the first three roots is 9.456; and 9.456/12.0 = .788, which indicated that approximately 79 percent of the total variance is accounted for by the first three components. Subsequent to obtaining these results, the program determined which subscales loaded into these three factors.

In order to place the factors on a more objective basis and to have the resulting factors accounted for in terms of common variance, the varimax orthogonal method for rotation was used. Employing this mathematical procedure, the correlation matrix was treated (rotated) in order to increase the strength of the relationship between the

TABLE 8

COEFFICIENTS OF CORRELATION BETWEEN LEADER BEHAVIOR SUBSCALES

Subscale	1	2	3	4	5	6	7	8	9	10	11	12
1. Representation	1.000											
2. Demand Reconciliation	.192	1.000										
3. Tolerance of Uncertainty	.175	.578	1.000									
4. Persuasiveness	.364	.739	.360	1.000								
5. Initiation of Structure	.321	.555	.038	.726	1.000							
6. Tolerance of Freedom	.541	- .005	.235	.173	.046	1.000						
7. Role Assumption	.222	.772	.484	.585	.609	- .065	1.000					
8. Consideration	.406	.539	.524	.462	.286	.663	.281	1.000				
9. Production Emphasis	.307	.458	- .125	.664	.758	- .002	.326	.168	1.000			
10. Predictive Accuracy	.299	.817	.506	.791	.683	.188	.742	.537	.582	1.000		
11. Integration	.350	.772	.554	.659	.622	.638	.701	.533	.775	.776	1.000	
12. Superior Orientation	.526	.234	.035	.325	.329	.237	.195	.268	.484	.288	.337	1.000

TABLE 9

POSITIVE EIGENVALUES OBTAINED FROM FACTOR ANALYSIS OF THE TWELVE LBDQ - FORM XII SUBSCALES

Number	Eigenvalue	Contribution to Variance	Percent of Variance
1	5.940	49.5	49.5
2	1.857	15.5	65.0
3	1.659	13.8	78.8
4	.719	6.0	84.8
5	.520	4.3	89.1
6	.355	3.0	92.1
7	.275	2.3	94.4
8	.233	1.9	96.3
9	.182	1.5	97.8
10	.123	1.0	98.9
11	.079	.7	99.5
12	.057	.5	100.0

three extracted factors and the variables (subscales) clustered around each principal factor. The results of the orthogonal factor rotation are shown in Table 10. Also computed and presented as percentages in the table are the common variances of the subscales accounted for by the three rotated factors. The remaining nine factors (from the original 12 x 12 correlation matrix) collectively accounted for 21.2 percent of the variance, or an average of only 2.36 percent per factor.

TABLE 10

LOADINGS OF LEADER BEHAVIOR -- SUBSCALES ON THREE VARIMAX FACTORS

Subscale Number and Name	Factor I "Transactional Oriented"	Factor II "Normative Oriented"	Factor III "Personal Oriented"	Identifying Factor
2. Reconciliation	.907	.235	.034	I
10. Predictive Accuracy	.832	.384	.156	I
7. Role Assumption	.820	.247	-.088	I
11. Integration	.785	.299	.340	I
3. Tolerance of Uncertainty	.756	-.391	.303	I
4. Persuasiveness	.678	.536	.159	I
9. Production Emphasis	.272	.888	.009	II
5. Initiation of Structure	.497	.750	-.002	II
12. Superior Orientation	.014	.615	.454	II
6. Tolerance of Freedom	.024	-.052	.906	III
8. Consideration	.540	-.024	.721	III
1. Representation	.069	.408	.707	III

Once the factors were located, they were interpreted and identified. Interpretation was based largely upon the variables to which the factors were strongly and weakly related. Three columns of the narrative description and definitions of the subscales were formed from the loadings on the three extracted factors. With the subscales divided according to the stronger relationship between each subscale and each extracted factor, an examination of the subscale definition within each unnamed factor was undertaken to determine a commonality of meaning. Although an inspection of the loadings in Table 10 revealed some loadings to appear nearly equivalent on more than one factor (for example, Persuasiveness and Consideration), it was the overall meaning of the stronger relationship for each factor which was used to interpret and give identification to the factors.

From this analysis and synthesis of the loadings, generic names for each factor were determined and assigned to each factor. Factor 1 could be termed "Transactional-oriented;" Factor II could be termed "Normative-oriented;" and Factor III could be termed "Personal-oriented." The titles reflect the three styles of leadership described by Getzels, Lipham, and Campbell[1] and the characteristics of the factors as derived from their associated subscales.

The normative style or orientation refers to the IIC chairman's emphasis on the institution and or role behavior; personal refers to an individual or personalistic behavior; and transactional refers to an alternate emphasis on both.[2]

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[1]Getzels, Lipham, and Campbell, op. cit., pp. 145-150.

[2]Ibid., pp. 145-146.

It should be noted that the factor structure obtained from this set of subscales was a function of the sample of subjects that contributed the data which formed the intercorrelation matrix. The stability of this structure over changes in the sample of subjects is a question the answer to which can be obtained only through subsequent studies of the leader behavior of multiunit school principals.

Although the subscales did not cluster exclusively around an Initiation of Structure and Consideration factor, the dichotomous interpretation associated with the two expected factors was retained within the "Normative-oriented" and the "Personal-oriented" factors. Of considerable interest was the emergence of the third factor and the extent to which it explained the variance.

Leader-Member Compatibility

According to Schutz's theory of interpersonal compatibility which was outlined in Chapter II, leader-member compatibility (K) can be described in terms of a summary of the interrelationship between three types of compatibility and compatibility in three need areas (see Table 2, Chapter II).

The calculation of a summary measure for the level of compatibility between an IIC chairman and the other IIC members for each school consisted of the following steps:

1. The nine compatibility subscales for each leader-member dyad, i.e., each IIC chairman-IIC member dyad, were calculated according to the formulas described in Chapter II.

2. Each compatibility subscale for each dyad was subtracted from 18, the total possible score for each, in order for the score to express a measure of compatibility rather than incompatibility.

3. The scores were entered on the matrix of compatibilities as shown below.

Types of Compatibility	K^I	K^C	K^A	K Total
r	rK^I	rK^C	rK^A	rK
o	oK^I	oK^C	oK^A	oK
x	xK^I	xK^C	xK^A	xK
Column Sums	K^I	K^C	K^A	K Total

4. The rows were summed to determine the level of compatibility for each type of compatibility.

5. The columns were summed to determine the level of compatibility in each need area.

6. The row sums were added together.

7. The column sums were added together.

8. The column sums were checked against the row sums for equality; equality reasonably assured the accuracy of the cell scores.

Since the leader-member compatibility level for each school was the statistic to be used in the test of the major hypothesis, a mean leader-member compatibility measure was obtained for each school. These calculated means appear in Table 11.

TABLE 11

MEAN LEADER-MEMBER COMPATIBILITY SCORE BY SCHOOL

School	Mean K	School	Mean K
1	133.67	17	121.50
2	116.67	18	115.00
3	129.00	19	121.29
4	115.67	20	120.75
5	114.85	21	120.50
6	116.33	22	105.00
7	120.00	23	121.00
8	136.75	24	119.99
9	128.84	25	126.82
10	132.00	26	115.00
11	136.67	27	132.34
12	123.00	28	119.00
13	128.50	29	118.00
14	111.83	30	108.00
15	108.40	31	131.00
16	110.99		

Multiple Regression Assumptions

Once the procedure for assessing IIC Effectiveness was satisfactorily substantiated and the independent variables in the major

hypothesis were calculated and factor analyzed, an assessment of the sample data was made to determine whether the variables in the major hypothesis satisfied the criteria which help to provide the theoretical justifications for the multiple regression analysis and the associated F test.[1]

The first criterion specifies that the sample data obtained on each variable must come from a population that has a normal distribution of scores. In order to determine whether this assumption was satisfied in the sample data, the skew and kurtosis of each variable's sample distribution was analyzed. PROGRAM DISTX[2] was used for determining these statistics for each variable's distribution of sample scores. The results from this program appear in Table 12 alongside

TABLE 12

DESCRIPTIVE STATISTICS OF SAMPLE DISTRIBUTIONS

Variable Name	Mean	S.D.	Skew	Probability of Skew	Kurtosis	Probability of Kurtosis
Effectiveness	13.8153	2.5127	-1.1087	.2669	.1933	.8411
Initiation of Structure	34.7103	4.5636	- .1135	.9057	.5016	.6223
Consideration	40.4465	4.5819	-1.0059	.3158	-.6212	.5419
Leader-Member Compatibility	40.9800	8.3319	- .3624	.7181	-.7409	.5343

[1]Hays, op. cit., pp. 364-378, 537.

[2]Stofflet and Fleckenstein, op. cit.

each variable's sample mean and standard deviation. The probability associated with each sample distribution's skew and kurtosis indicates the frequency with which the skew and kurtosis can be expected to occur by chance. The variables whose highly skewed sample distributions evidenced a low probability of occuring by chance were noted and deserved careful consideration since the skew probability was a possible indication of a skew in the parent distribution.

The second criterion states that the error variance must have the same value for each variable's overlying population. "This assumption of homogeneous variances can be violated without serious risk, provided that the number of cases in each sample is the same."[1] This assumption was satisfied since each variable was equally composed of thirty-one scores.

The data collection method utilized in this study assured the researcher than an independence of observations, the third criterion, was satisfied.

The fourth criterion is the assumption that the data are linear and for this study, that assumption is made.

Having completed these preliminary analyses, the next step was to test the hypotheses stated in Chapter I.

Test of the Major Hypothesis

The major hypothesis of the study stated that there was no significant multiple correlation between IIC Effectiveness and the

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[1]Hays, p. 379.

interrelationship between the IIC chairman's Initiation of Structure and Consideration behaviors and his interpersonal compatibility with the IIC members.

The analytical objective was to calculate the correlation which the three independent variables -- Initiation of Structure, Consideration, and leader-member compatibility -- had simultaneously with the dependent variable, IIC Effectiveness, and determine whether the correlation was significant. Multiple regression was chosen for this purpose since it enables one to determine the strength of the relationship between a dependent variable and two or more independent variables, and the usefulness of that relationship in predicting the dependent variable.[1]

In the multiple regression analysis, a forward stepwise procedure was used in which the independent variable which explains the dependent variable to the greatest extent is entered first followed by the independent variable that explains the dependent variable to the next greatest extent, and so forth. PROGRAM STEPREG 1, a statistical program in the STATJOB series of programs available at the Madison Academic Computing Center, was used to perform the stepwise procedure.

Table 13 shows the Effectiveness, Initiation of Structure, and leader-member compatibility scores for each school in the sample, along with the ranking which each score has relative to the other scores in its category.

Table 14 illustrates the results of the regression analysis. The table is composed of two sections. The first section shows, for each step, the name of the independent variable entered into the

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[1]Hays, p. 567.

TABLE 13

MEAN EFFECTIVENESS, INITIATION OF STRUCTURE CONSIDERATION, AND LEADER-MEMBER COMPATIBILITY SCORES FOR EACH SCHOOL IN THE SAMPLE -- RANKINGS IN PARENTHESES

School	Effectiveness and Rank	Leader Initiation of Structure Behavior and Rank	Leader Consideration Behavior and Rank	Leader-Member Compatibility and Rank
1	13.317 (19)	40.00 (3)	31.25 (31)	133.67 (3)
2	11.908 (26)	29.67 (27)	37.00 (24)	116.67 (21)
3	13.256 (21)	35.25 (16)	42.00 (11)	129.00 (6)
4	13.301 (20)	37.00 (9)	35.67 (28)	115.67 (23)
5	10.275 (28)	33.57 (19)	36.29 (26)	114.85 (26)
6	14.677 (11)	34.00 (18)	37.00 (25)	116.33 (22)
7	14.186 (13)	37.00 (10)	40.20 (17)	120.00 (10)
8	14.939 (10)	41.50 (2)	44.50 (5)	136.75 (1)
9	14.426 (12)	38.67 (4)	45.00 (2)	128.84 (7)
10	9.744 (29)	34.14 (17)	36.29 (27)	132.00 (17)
11	13.042 (22)	24.00 (31)	38.00 (22)	136.67 (2)
12	18.291 (1)	27.00 (30)	41.00 (13)	123.00 (11)
13	17.345 (3)	35.50 (14)	39.50 (19)	128.50 (8)
14	16.159 (6)	33.00 (23)	45.50 (1)	111.83 (27)
15	11.263 (27)	32.33 (24)	41.00 (14)	108.40 (29)
16	14.141 (14)	46.33 (1)	44.33 (6)	110.99 (28)
17	16.147 (7)	37.00 (11)	45.00 (3)	121.50 (12)
18	16.721 (4)	35.50 (15)	39.00 (20)	115.00 (24)
19	13.532 (18)	31.14 (25)	40.71 (16)	121.29 (13)
20	15.882 (8)	36.75 (20)	43.75 (8)	120.75 (15)
21	16.422 (5)	38.50 (6)	42.67 (10)	120.50 (16)
22	9.741 (30)	33.00 (21)	33.50 (30)	105.00 (31)
23	12.980 (23)	33.00 (22)	41.00 (15)	121.00 (14)
24	13.934 (15)	31.00 (26)	44.67 (4)	119.99 (18)
25	15.487 (9)	37.50 (8)	43.29 (9)	126.82 (9)
26	11.948 (25)	29.50 (28)	39.00 (21)	115.00 (25)
27	7.200 (31)	27.50 (29)	35.50 (29)	132.34 (4)
28	13.659 (17)	37.00 (12)	42.00 (12)	119.00 (19)
29	17.641 (2)	38.00 (7)	44.00 (7)	118.00 (20)
30	13.929 (16)	38.67 (5)	38.00 (23)	108.00 (30)
31	12.781 (24)	33.00 (23)	40.00 (18)	131.00 (5)
	Median=13.929	Median=35.25	Median=40.71	Median=120.50

TABLE 14

ANALYSIS OF THE REGRESSION OF INITIATION OF STRUCTURE, CONSIDERATION, AND LEADER-MEMBER COMPATIBILITY ON IIC EFFECTIVENESS

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determiniation	F Test for Significance	Partial F Value
1	Consideration	.5805	.3370	14.74*	14.74*
2	Initiation of Structure	.6037	.3644	8.03*	1.21
3	Leader-Member Compatibility	.6073	.3688	5.26*	0.19

STANDARDIZED REGRESSION COEFFICIENTS FOR EACH STEP

Step No.	Consideration	Initiation of Structure	Leader-Member Compatibility
1	.5805		
2	.5310	.1730	
3	.5258	.1804	.0665

* Significant at the .05 level

equation, the multiple correlation coefficient, the coefficient of determination (which is the percentage of the variance of the dependent variable explained by the independent variables), the F test for significance of the combination of the independent variables, and the partial F test which indicates the contribution of the variable introduced into the equation at that particular step. The second section shows the standardized regression coefficient for each variable which represents the relative contribution of each independent variable to the total regression equation. At the first step the coefficient for the variable entered is shown. At the second step the coefficients for the first variable and the variable entered at that step are shown. At the third step the coefficients for all three variables are shown.

Where the value obtained on the F tests of the relationship between the independent variables and the dependent variable was found to be significant at the .05 level, the value was identified with an asterisk. Where significance was found for the value obtained in the F tests of the partial contribution each independent variable made to the regression equation, the partial F value was also identified with an asterisk.

The results of this analysis revealed a statistically significant relationship between the independent and dependent variables. The amount of variation in the dependent variable explained by the independent variables was 36.88 percent. Thus, the results indicate that the hypothesis of no multiple correlation should be rejected with considerable assurance.

In response to an interest in developing from the data the best regression model of IIC effectiveness, an analysis was made of all

variables obtained from the questionnaires to determine whether it was possible to obtain a multiple correlation and a coefficient of determination greater than those obtained in the test of the major hypothesis.

Again, STEPREG 1, the stepwise multiple linear regression analysis, was used. The program was directed to enter at each step that variable which contributed the greatest increase in the multiple correlation coefficient. The results of this analysis appear in Table 15 and are reported stepwise.

A comparison of the results of this analysis with those obtained in the test of the major hypothesis proved to be highly revealing. First, both the multiple correlation coefficient ($R = .87$) and the coefficient of determination ($R^2 = .76$) of the expanded model were increased over those obtained for the test of the major hypothesis ($R = .60$; $R^2 = .37$).

The leader Consideration behavior variable was found to be the most important variable in each model.

The appearance of two measures of inter-IIC member compatibility (representing all possible interpersonal combinations within an IIC) in the expanded model underscores the important relationship which intra-group interchange compatibility in the affection and inclusion areas have with IIC effectiveness.

Most noteworthy, however, was the negative regression coefficient obtained for the leader-member originator control compatibility variable which denoted the existence of an inverse relationship in this sample between IIC effectiveness and this leader-member compatibility measure.

TABLE 15

REGRESSION ANALYSIS OF ALL VARIABLES WITH DEPENDENT VARIABLE OF EFFECTIVENESS - AN EXPANDED MODEL

Step No.	Variable Entered	Multiple Correlation Coefficient	Coefficient of Determination	F Test for Significance	Partial F Value
1	Leader Consideration Behavior	.5805	.3370	14.74*	14.74*
2	Number of IIC Members#	.6655	.4428	11.13*	5.32*
3	Number of Hours an IIC Meets Each Month	.7454	.5556	11.25*	10.45*
4	Inter-IIC Member Interchange Compatibility in the Affection Need Area (GxK^A)	.7940	.6305	11.09*	5.27*
5	Inter-IIC Member Interchange Compatibility in the Inclusion Need Area (GxK^I)	.8360	.6989	11.61*	6.08*
6	Leader-IIC Member Originator Compatibility in the Control Need Area (OK^C)#	.8704	.7576	12.50*	6.05*

# Denotes negative regression coefficients
* Denotes significance at the .05 level

The negative regression coefficient found between IIC effectiveness and the member-size of an IIC indicated that IIC effectiveness also was inversely related to the number of IIC members.

Tests of the Ancillary Hypotheses

The ancillary hypotheses proposed in Chapter I were tested using a Pearson product moment correlation procedure to determine the strength of the linear relationship between the variables considered in each of the hypotheses. This analysis was performed by PROGRAM WISE*ISTAT.IDISTX,[1] an interactive program which the Wisconsin Information Systems for Education designed to compute descriptive statistics from raw score data.

This program produced means, standard deviations, correlations, distributional skew and kurtosis for each variable. Probabilities associated with the correlations, skews and kurtoses were also provided.

The ancillary hypotheses were posed to assess empirically the relationship between IIC effectiveness and several factors which have been assumed to be related to it.

The hypotheses, as stated, were:

1. There is no relationship between IIC effectiveness and the percentage of an IIC's members who attended a Center workshop for either multiunit school principals or unit leaders.

2. There is no relationship between IIC effectiveness and the IIC's involvement in its prescribed tasks.

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[1]Donald N. McIsaac, Jr., and Dennis Spuck, INTERACTIVE DESCRIPTIVE STATISTICS: PROGRAM WISE*ISTAT.IDISTX, op. cit.

3. There is no relationship between IIC effectiveness and the IIC chairman's/principal's administrative experience.

4. There is no relationship between IIC effectiveness and the number of hours the IIC meets each month.

Table 16 describes the coefficients of correlation obtained between IIC effectiveness and the independent variables in the four hypotheses. The probability that coefficients as high or higher would occur purely by chance is indicated within the parentheses directly below each coefficient.

TABLE 16

CORRELATION COEFFICIENTS OBTAINED FOR THE FOUR ANCILLARY HYPOTHESES

Percentage of an IIC's Members Who Attended a Center Workshop for Either Multiunit School Principals or Unit Leaders	IIC Decision Involvement	IIC Chairman's Years of Administrative Experience	Number of Hours an IIC Meets Each Month
.0594 (.7491)	.7292 (.0000*)	.1502 (.5797)	.2943 (.1045)

* Significant at the .05 level

Of the four ancillary questions tested, only IIC decision involvement was significantly correlated with IIC Effectiveness. The number of hours an IIC spent meeting together each month approached a signficant correlation with IIC Effectiveness, but attendance at workshops by

multiunit school principals and unit leaders and the principals years of administrative experience were found to have non-significant correlations with IIC effectiveness.

Inherent within the use of the correlational method of hypothesis testing, causality cannot be inferred from the obtained results; rather, they should be considered worthy of observational analysis if a determination of causality is subsequently desired.

A Test of the Three-Dimensional Model of Task Groups

In Chapter I a three-dimensional model of task groups was proposed as a means whereby task group (or IIC) effectiveness could be explained in terms of the interrelationship between leader-member compatibility, leader Consideration behavior, and leader Initiation of Structure behavior. In order to test the model, each school's octal location in the model was determined on the basis of whether its mean leader-member compatibility score (K), mean leader Consideration behavior score, and mean leader Initiation of Structure score was above or below the median of the distribution of mean scores. Table 13 shows the rank for each score in the parenthesis next to each score. From the rankings in each distribution, scores above and below the group median were designated "Hi" and "Lo." The location of each school in the model's octants was then determined on the basis of these Hi-Lo scores. Table 17 describes, by group number, the octal location of each IIC, the Effectiveness score for each IIC, and the ranking of the Effectiveness score. Whereas Table 17

shows the model in terms of its division along the Hi-Lo Compatibility dimension of the model, Tables 18 and 19 show the divisions along the Hi-Lo dimensions of Initiation of Structure and Consideration.

TABLE 17

OCTAL LOCATIONS

Hi K Quadrants				Lo K Quadrants			
Group No.	Hi K School	Hi IS Effectiveness	Hi C Ranking	Group No.	Lo K School	Hi IS Effectiveness	Hi C Ranking
1	8	14.939	10	5	*21	16.422	5
	9	14.426	12		28	13.659	17
	25	15.487	9		29	17.641	2
	17	16.147	7		16	14.141	14
	20	15.882	8				
	*21	16.422	5				
	* 3	13.256	21				
2	1	13.317	19	6	4	13.301	20
	13	17.345	3		18	16.721	4
	7	14.186	13		30	13.929	16
3	* 3	13.256	21	7	24	13.934	15
	*19	13.532	18		14	16.159	6
	23	12.980	23		15	11.263	27
	12	18.291	1				
4	11	13.042	22	8	2	11.908	26
	31	12.781	24		6	14.677	11
	*19	13.532	18		26	11.948	25
	27	7.200	31		5	10.275	28
					22	9.741	30
					10	9.744	29

* Denotes schools which, because of their median score, were located in two octants

TABLE 18

OCTAL LOCATIONS

Hi IS Quadrants				Lo IS Quadrants			
Group No.	Hi IS School	Hi K Effec-tiveness	Hi C Ranking	Group No.	Lo IS School	Lo K Effec-tiveness	Hi C Ranking
1	8	14.939	10	3	* 3	13.256	21
	9	14.426	12		*19	13.532	18
	25	15.487	9		23	12.980	23
	17	16.147	7		12	18.291	1
	20	15.882	8				
	*21	16.422	5				
	* 3	13.256	21				
2	1	13.317	19	4	11	13.042	22
	13	17.345	3		31	12.781	24
	7	14.186	13		*19	13.532	18
					27	7.200	31
5	*21	16.422	5	7	24	13.934	15
	28	13.659	17		14	16.159	6
	29	17.641	2		15	11.263	27
	16	14.141	14				
6	4	13.301	20	8	2	11.908	26
	18	16.721	4		6	14.677	11
	30	13.929	16		26	11.948	25
					5	10.275	28
					22	9.741	30
					10	9.744	29

* Denotes schools which, because of their median score, were located in two octants

TABLE 19

OCTAL LOCATIONS

Hi C Quadrants				Lo C Quadrants			
Group No.	Hi C School	Hi K Effec-tiveness	Hi IS Ranking	Group No.	Lo C School	Hi K Effec-tiveness	Hi IS Ranking
1	8	14.939	10	2	1	13.317	19
	9	14.426	12		13	17.345	3
	25	15.487	9		7	14.186	13
	17	16.147	7				
	20	15.882	8				
	*21	16.422	5				
	* 3	13.256	21				
3	* 3	13.256	21	4	11	13.042	22
	*19	13.532	18		31	12.781	24
	23	12.980	23		*19	13.532	18
	12	18.291	1		27	7.200	31
5	*21	16.422	5	6	4	13.301	20
	28	13.659	17		18	16.721	4
	29	17.641	2		30	13.929	16
	16	14.141	14				
7	24	13.934	15	8	2	11.908	26
	14	16.159	6		6	14.677	11
	15	11.263	27		26	11.948	25
					5	10.275	28
					22	9.741	30
					10	9.744	29

* Denotes schools which, because of their median score, were located in two octants

An exact least squares analysis of variance was used initially to determine if a significant difference existed between the effectiveness scores. The results of this analysis appear in Table 20.

TABLE 20

ANALYSIS OF VARIANCE FOR EFFECTIVENESS

Source	SS	df	MS	F
Groups	87.0499	7	12.4357	2.9538*
Error	109.4600	26	4.2100	
TOTALS	196.5099	33		

* Significant at the .05 level

To reject the hypothesis that the eight group effectiveness means were the same, the critical F value was $F_{7,26}$ (.05) = 2.39. Since the computed F value was 2.8988, the hypothesis of no difference was rejected. The significant F value permitted post hoc analyses of the data to determine where the significant differences existed. A Scheffe procedure[1] was used to test the pairwise differences between each of the Hi-Lo divisions and between each of the octal groups. Table 21 illustrates the pattern of the first set of comparisons and the pairwise differences between the average of the Hi-Lo sets of octants. Table 22 shows the pairwise differences between all of the octants.

[1]Hays, pp. 485-489.

TABLE 21

PAIRWISE DIFFERENCES BETWEEN HI-LO QUADRANTS

	Group	1	2	3	4	5	6	7	8	
	Mean	15.222	14.949	14.514	11.638	15.465	14.650	13.785	11.382	Difference
	N	7	3	4	4	4	3	3	6	
Comparisons										
1		1/4	1/4	1/4	1/4	-1/4	-1/4	-1/4	-1/4	.259
2		1/4	1/4	-1/4	-1/4	1/4	1/4	-1/4	-1/4	2.242
3		1/4	-1/4	1/4	-1/4	1/4	-1/4	1/4	-1/4	1.592

TABLE 22

PAIRWISE DIFFERENCES BETWEEN OCTANT MEANS

Group	1 Hi K Hi IS Hi C	2 Hi K Hi IS Lo C	3 Hi K Lo IS Hi C	4 Hi K Lo IS Lo C	5 Lo K Hi IS Hi C	6 Lo K Hi IS Lo C	7 Lo K Lo IS Hi C	8 Lo K Lo IS Lo C
Mean	15.222	14.949	14.514	11.638	15.465	13.118	13.785	11.382
N	7	3	4	4	4	3	3	6
Group								
1		.273	.708	3.584	- .243	2.104	1.437	3.840
2			.435	3.311	- .516	1.831	1.164	3.567
3				2.876	- .951	1.396	.729	3.132
4					-3.827	-1.480	-2.147	.256
5						2.347	1.680	4.083
6							- .667	1.736
7								2.403
8								

From the results of analyses, none of the pairwise differences tested was found to be significant. Thus, the three-dimensional model of task groups was found to have no utility in determining IIC effectiveness.

CHAPTER IV

SUMMARY, FINDINGS, CONCLUSIONS, AND IMPLICATIONS

This chapter consists of three sections. The first section contains a review of the study as presented in the first three chapters. In the second section a discussion of the findings of the study is presented with the conclusions that may be drawn. The chapter concludes with a report on some implications for practice and further research which may be suggested from the results of this study.

Summary

In Chapter I the problem of implementing an effective participative decision-making mode of operation in the multiunit elementary school was presented. Following an introduction to the organizational structure of the multiunit elementary school, the Instructional Improvement Committee's function in the organization was described as linking the teaching and administrative levels of the school. In the IIC the building principal, who also serves as the IIC chairman, was expected to share with representatives of the teaching staff the responsibility of formulating decisions, plans, and procedures related to the instructional program.

Evidence was presented from Pellegrin's study of three multiunit elementary schools and Quilling's evaluation of seventeen multiunit

elementary schools that a considerable difference existed between the actual and expected functions of the IIC's in their samples. The evidence suggested that effective participative decision making could not be realized simply by developing an organizational model and a set of operational guidelines.

In response to the evidence found in these two studies, this study was undertaken to determine empirically factors which significantly influence the operational effectiveness of IIC's.

In order to gain insight into the operational characteristics of a participative decision-making mode of operation, the literature review focused on studies of participative decision making in other organizational contexts. In addition, leadership studies and social system theory were reviewed for the insight they could provide relative to task group effectiveness. The review pointed to the influence which an individual's personal experiences, personality, and interpersonal relations orientations had on the expectations he held for the institution's mode of operation as manifested in the role behaviors of the personnel within the institution.

A three-dimensional model of task groups was proposed as a means whereby IIC effectiveness could be assessed in terms of the interrelationship between leader-member compatibility and two relatively dichotomous leader behaviors, Initiation of Structure and Consideration. The underlying assumption of the model was that for an IIC to be an effective component of the multiunit elementary school's organizational framework, the IIC chairman's leader behavior had to be compatible with the need-dispositions of the IIC members.

Chapter I was concluded by posing a hypothesis to test the interrelationship between IIC effectiveness and the three dimensions of the model. Four ancillary hypotheses were also posed to test the relationship between IIC effectiveness and factors which practitioners have assumed to be related to IIC effectiveness.

Chapter II contained a discussion of instrumentation, validity and reliability, and the procedures followed in the design of the study. Also included was a description of the study sample and the procedures followed in its selection. In Chapter III the data collected for the study were presented and the results of the statistical analyses were reported.

Findings and Conclusions

This section contains an analysis of the results obtained and the conclusions that could be drawn from the tests of the major and ancillary hypotheses and the three-dimensional model of task groups. The probability level for all tests of statistical significance was established at .05.

Major Hypothesis

The major hypothesis stated, "There is no significant multiple correlation between IIC Effectiveness and the interrelationship of the IIC chairman's Initiation of Structure and Consideration behaviors and IIC chairman-IIC member compatibility." A multiple linear regression analysis indicated a significant multiple correlation to exist between the dependent and independent variables. Thus, the null hypothesis

was rejected. However, only the leader Consideration behavior variable exhibited a significant partial F value.

From these results it may be concluded that the more an IIC chairman was preceived to exhibit a primary concern for the comfort, well being, status, and contribution of the IIC members, the more effective the IIC.

In the expanded regression model a significant multiple correlation was found to exist between IIC Effectiveness and six independent variables:

1. Leader Consideration behavior
2. Number of IIC members
3. Number of hours an IIC meets each month
4. Inter-IIC member interchange compatibility in the affection need area
5. Inter-IIC member interchange compatibility in the inclusion need area
6. Leader-IIC member originator compatibility in the control need area

In this model the partial F value for each of the independent variables was found to be significant. However, significant negative regression coefficients were obtained for the variable "number of IIC members" and the variable "leader-member compatibility."

The results of this analysis led to the conclusion that increases in the effectiveness of IIC's tend to be related to increases in (1) leader Consideration behavior, (2) the number of hours an IIC meets each

month, and (3) inter-IIC member interchange compatibility in the inclusion and affection need area; and increases in the effectiveness of IIC's tend to be related to decreases in (1) the number of IIC members and (2) leader-member compatibility in the control need area.

Ancillary Hypotheses

The first ancillary hypothesis stated, "There is no significant relationship between IIC effectiveness and the percentage of IIC members that attended a Center workshop for multiunit school principals or unit leaders." No statistically significant correlation was found between the two variables.

The second hypothesis stated, "There is no significant relationship between IIC effectiveness and the IIC's involvement in its prescribed decisions/tasks." A statistically significant correlation was found and the hypothesis was rejected. The conclusion drawn from this finding is that respondent perceptions of IIC effectiveness are significantly related to their perceptions of the IIC's involvement in those decisions and tasks that have been ascribed to it.

The third hypothesis stated, "There is no significant relationship between IIC effectiveness and the principal's administrative experience." No statistically significant correlation was found between the two variables.

The fourth hypothesis stated, "There is no significant relationship between IIC effectiveness and the number of hours the IIC meets each month." No statistically significant relationship was found between IIC effectiveness and the average number of IIC meetings per month. The

near significance of the correlation, however, as well as its significant relationship with IIC effectiveness in conjunction with other variables in the expanded model, suggests that the effectiveness of an IIC may be related to the amount of time the IIC meets together IF other contributing factors are present.

The Three-Dimensional Model of Task Groups

Despite the significant multiple correlation obtained in the test of the major hypothesis, the results obtained in the analysis of the three-dimensional model did not support its utility. Although a significant difference was found to exist between the effectiveness scores in the model, no significant difference was found between the Hi-Lo divisions or between the octal cells.

The differences that were found, however, were in the expected directions. The relatively small differences obtained in the pairwise comparisons were considered to result largely from the small number of observations in each of the comparisons. Therefore, the model may prove to be of some utility if similar data can be obtained from a larger sample.

Summary of Conclusions

Based on the findings of the study, the following conclusions were drawn with respect to IIC effectiveness:

1. IIC effectiveness is significantly related to the interrelationship of the IIC chairman's leader Initiation of Structure and Consideration behaviors and his compatibility with the IIC members.

2. IIC effectiveness has a significant relationship with the interrelationship of (a) an IIC chairman who regards the comfort, well being, status, and contribution of the other IIC members, (b) the IIC that meets longer each month, (c) the IIC whose members have a preference for high interaction with others, (d) the IIC whose members have a preference for close personal relations both toward people and from them toward self, (e) the IIC which has fewer members, and (f) the IIC in which the IIC chairman does not dominate or control the other IIC members.

3. There is no significant relationship between IIC effectiveness and the number of IIC members that have participated in R and D Center supported workshops for multiunit school personnel.

4. IIC effectiveness is significantly related to the extent to which the IIC involves itself in its prescribed tasks.

5. There is no significant relationship between IIC effectiveness and the IIC chairman's administrative experience.

6. IIC effectiveness was not significantly related exclusively to the number of hours the IIC met together each month.

The conclusions that were drawn from the study are limited, of course, to the population of multiunit elementary schools from which the sample was drawn. The conclusions are further limited by the abstract nature of such concepts as "compatibility," "leader Initiation of Structure behavior," and "leader Consideration behavior," and by the use of self-report instruments which are perceptual as opposed to direct measures. The generalizability of a study composed of these

limitations must be constrained by the degree to which acceptance can be made of the assumptions underlying both the statistical procedures and the theoretical framework employed. However, this researcher feels that enough evidence has been obtained from the sample schools to warrant the following implications for practice and for further research.

Implications for Practice and Further Research

This section is composed of the implications which the study's findings have for the operation of the multiunit elementary school's Instructional Improvement Committee and for further research of its operations.

Implications for Practice

The Instructional Improvement Committee was incorporated in the multiunit elementary school's organizational structure for the purpose of involving classroom teachers in the decision-making process and, through their involvement, enhancing the acceptance and quality of the decisions, plans, and procedures related to the instructional program. Whereas successful teaching experience has frequently been mentioned by multiunit school principals as the most important criterion for selecting unit leaders, the results of the study indicated inter-IIC member compatibility to be a factor strongly associated with IIC effectiveness. The implication of this finding is that the selection criteria for unit leader candidates should include careful consideration of the matter of how well the candidate will "get along" with the other IIC members. The alternative to screening candidates on

this basis, and possibly rejecting some candidates who might make an important contribution to decision content, is to design and provide an ongoing inservice program the purpose of which would be to sensitize IIC members to the potentially deleterious effect which incompatible interpersonal relations orientations can have on the effectiveness of the IIC unless they are subordinated to the attainment of the IIC's prescribed tasks.

The study's findings also hold implications with regard to the criteria for selection of multiunit school principals. Since administrative experience was not found to be related to IIC effectiveness, selection committees should be cautious about placing too much emphasis on this factor. In addition, the significant relationship between IIC effectiveness and a principal's leader Consideration behavior implies that candidates ought to be considered on the basis of having exhibited this behavior in other supervisory capacities or on the basis of being predisposed to behave primarily in this manner.

Although the length of time which IIC's spend meeting together was not, in itself, significantly related to IIC effectiveness, it does have a significant relationship when considered in conjunction with (1) inter-IIC member compatibility, (2) a small IIC membership, (3) a chairman who exhibits a high leader Consideration behavior, and (4) a chairman who does not dominate or control the IIC. Therefore, without the support of these other factors, an IIC should not expect to improve its effectiveness simply by scheduling more meeting time to accomplish its prescribed tasks. In other words, time alone cannot assure IIC effectiveness.

The finding of a significantly high negative relationship between IIC effectiveness and the number of IIC members has obvious implications for the effective operation of an IIC. Membership in the IIC should be restricted to the fewest possible number of personnel needed to fully represent the teaching staff.

Implications for Further Research

Several questions for further research have been raised by this study. Researchers concerned with educational administration may find the following questions of interest:

1. Is a superior's leader behavior related to his interpersonal relations orientation? If so, what behaviors tend to be related to the different orientations?

2. What would a factor analysis of the LBDQ - Form XII subscales reveal in other types or levels of schools? and in other organizational settings?

3. What is the relative influence that interpersonal relations orientations and institutional and/or professional conditioning have on subordinate's expectations for the role behavior of his superior? Is there a difference?

4. Can an inservice program designed to moderate the effects of intermember incompatibility in an IIC help to improve its effectiveness?

5. If IIC effectiveness were measured by means of an observational analysis of the content of and follow through on an IIC's

decisions, would the correlates of effectiveness be similar to those obtained in this study?

6. Is IIC effectiveness related to student achievement or the learning climate of the school?

7. Could the findings in the expanded regression model be determined as causing IIC effectiveness or resulting from it?

8. Are there other factors not examined in the study that are related to IIC effectiveness?

9. Do IIC members feel that there are tasks other than those prescribed for the IIC that are essential to the successful implementation of individually guided education in their schools?

10. Is there an optimal number of IIC members associated with IIC effectiveness?

11. Would the results of this study be similar across a different sample of multiunit elementary schools?

In conclusion, it is the author's hope that this study will provide insight into the operations of the multiunit elementary school's Instructional Improvement Committee and that it will encourage other researchers to investigate with greater precision those questions raised by the study.

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APPENDIX A

LEADER BEHAVIOR, PERSONNEL INTERACTION, AND DECISION-MAKING IN THE MULTIUNIT ELEMENTARY SCHOOL

EXPERIMENTAL COPY

Purpose of the Instrument:

You are participating in a study sponsored by the University of Wisconsin's Research and Development Center for Cognitive Learning and Department of Educational Administration. Its purpose is to determine the variables which are important in implementing participation in the decision-making process of multiunit elementary schools. As you consider each of the questions on the following instruments, think and respond from the viewpoint of your present position. All responses will remain confidential and none will be identified by person.

When you have completed the instrument, staple it together and return it to your school's principal.

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PREFACE

BACKGROUND DATA

A. Your Position? A. _____

1. Principal
2. Unit Leader
3. Teacher
4. Instructional or Clerical Aide
5. Building Secretary
6. Custodian
7. Other (Please Specify) _____

B. Sex B. _____

1. Male
2. Female

C. Number of years in present school system? C. _____

D. Number of years in present school? D. _____

E. Number of years in your present position? E. _____

F. Total years of teaching experience? F. _____

G. Total years of administrative or supervisory experience? G. _____

H. Highest level of professional preparation? H. _____

1. Less than Bachelors Degree
2. Bachelors Degree
3. Bachelors + 16 Credits
4. Masters Degree
5. Masters + 16 Credits
6. Masters + 32 Credits
7. Doctors Degree

GO ON TO THE NEXT PAGE . . . .

I. Have you participated in a 5-day workshop for MUS-E principals or unit leaders at one of the following locations? I. _____

Marquette U.	UW - Madison
UW - Eau Claire	UW - Milwaukee
UW - La Crosse	U. of Toledo

1. Yes
2. No

J. Do unit leaders in your school receive additional pay for their position? J. _____

1. Yes
2. No

K. If Item J is yes, how much more pay do unit leaders receive than a teacher with equal experience and preparation? K. _____

L. How are unit leaders selected in your school? L. _____

1. Elected by unit
2. Selected by principal
3. If another method is used, please explain below:

_____

_____

_____

M. How many multiunit schools are there in your district? M. _____

GO ON TO THE NEXT PAGE . . . .

SECTION I

FIRO-B

DIRECTIONS: For each statement, decide which of the following answers best applies to you. Place the number of the answer on the line at the left of the statement. Please be as honest as you can.

1. usually 2. often 3. sometimes 4. occasionally 5. rarely 6. never

_____ 1. I try to be with people.

_____ 2. I let other people decide what to do.

_____ 3. I join social groups.

_____ 4. I try to have close relationships when I have an opportunity.

_____ 5. I tend to join social organizations when I have an opportunity.

_____ 6. I let other people strongly influence my actions.

_____ 7. I try to be included in informal social activities.

_____ 8. I try to have close, personal relationships with people.

_____ 9. I try to include other people in my plans.

_____ 10. I let other people control my actions.

_____ 11. I try to have people around me.

_____ 12. I try to get close and personal with people.

_____ 13. When people are doing things together, I tend to join them.

_____ 14. I am easily led by people.

_____ 15. I try to avoid being alone.

_____ 16. I try to participate in group activities.

GO ON TO THE NEXT PAGE . . . .

For each of the next group of statements, choose one of the following answers:

1. most people 2. many people 3. some people 4. a few people
5. one or two people 6. nobody

_____ 17. I try to be friendly to people.

_____ 18. I let other people decide what to do.

_____ 19. My personal relations with people are cool and distant.

_____ 20. I let other people take charge of things.

_____ 21. I try to have close relationships with people.

_____ 22. I let other people strongly influence my actions.

_____ 23. I try to get close and personal with people.

_____ 24. I let other people control my actions.

_____ 25. I act cool and distant with people.

_____ 26. I am easily led by people.

_____ 27. I try to have close, personal relationships with people.

_____ 28. I like people to invite me to things.

_____ 29. I like people to act close and personal with me.

_____ 30. I try to influence strongly other people's actions.

_____ 31. I like people to invite me to join in their activities.

_____ 32. I like people to act close toward me.

_____ 33. I try to take charge of things when I am with people.

_____ 34. I like people to include me in their activities.

_____ 35. I like people to act cool and distant toward me.

_____ 36. I try to have other people do things the way I want them done.

GO ON TO THE NEXT PAGE . . . .

_____ 37. I like people to ask me to participate in their discussions.

_____ 38. I like people to act friendly toward me.

_____ 39. I like people to invite me to participate in their activities.

_____ 40. I like people to act distant toward me.

For each of the next group of statements, choose one of the following answers:

1. usually 2. often 3. sometimes 4. occasionally
5. rarely 6. never

_____ 41. I try to be the dominant person when I am with people.

_____ 42. I like people to invite me to things.

_____ 43. I like people to act close toward me.

_____ 44. I try to have other people do things I want done.

_____ 45. I like people to invite me to join their activities.

_____ 46. I like people to act cool and distant toward me.

_____ 47. I try to influence strongly other people's actions.

_____ 48. I like people to include me in their activities.

_____ 49. I like people to act close and personal with me.

_____ 50. I try to take charge of things when I'm with people.

_____ 51. I like people to invite me to participate in their activities.

_____ 52. I like people to act distant toward me.

_____ 53. I try to have other people do things the way I want them done.

_____ 54. I take charge of things when I'm with people.

GO ON TO THE NEXT PAGE . . . .

SECTION II

DECISION INVOLVEMENT

DIRECTIONS: This section contains fourteen decision items. Indicate the extent to which your school's Instructional Improvement Committee has been involved with each decision. Use the involvement levels listed below to rate each decision item.

3 Made the decision

2 Recommended the decision

1 Provided and/or gathered information regarding the decision

0 No involvement

_____ 1. The decision on the priority for the use of unassigned equipment, unscheduled rooms, and multipurpose areas.

_____ 2. The decision on the content and procedures for keeping the cumulative records of the pupils in your school.

_____ 3. The decision on the content of and procedures for reporting pupil progress to parents.

_____ 4. The decision on the specific performance objectives projected for your school's students.

_____ 5. The decision on obtaining consultant assistance for curricular or instructional matters in your school.

_____ 6. The decision on the roles of instructional and/or clerical aides in your school.

_____ 7. The decision on the implementation of IGE in a subject matter area in your school.

_____ 8. The decision on criteria for matching pupils with teacher in each unit.

_____ 9. The decision on the orientation activities for the new staff members in your school.

GO ON TO THE NEXT PAGE . . . .

3 Made the decision

2 Recommended the decision

1 Provided and/or gathered information regarding the decision

0 No involvement

____ 10. The decision on the means for interpreting the IGE/MUS-E concept to parents and residents in your school's attendance area.

____ 11. The decision on the selection or development of a series of achievement and ability tests for assessing each student in your school.

____ 12. The decision on the rules governing the conduct of your school's pupils.

____ 13. The decision on the activities for inservice development of your school's staff.

____ 14. The decision on the utilization of volunteer community personnel in the instructional program and other activities in your school.

GO ON TO THE NEXT PAGE . . . .

SECTION III

LEADER BEHAVIOR DESCRIPTION

Please indicate in this section how you believe your principal actually behaves as a leader in your school's Instructional Improvement Committee (IIC). Each item describes specific kind of leader behavior. Mark the frequency with which you believe your principal to engage in each kind of behavior.

DIRECTIONS:

1. READ each item carefully.
2. THINK how frequently your principal actually engages in the behavior described by the item. How often does your principal act in the manner described?
3. INDICATE your answer for each statement on the questionnaire according to the following illustration:

5 My principal <u>always</u> acts this way

4 My principal <u>often</u> acts this way

3 My principal <u>occasionally</u> acts this way

2 My principal <u>seldom</u> acts this way

1 My principal <u>never</u> acts this way

_____ 1. My principal acts as the spokesman of the IIC.

_____ 2. My principal waits patiently for the results of a decision.

_____ 3. My principal makes pep talks to stimulate the IIC.

_____ 4. My principal lets IIC members know what is expected of them.

_____ 5. My principal allows the IIC members complete freedom in their work.

GO ON TO THE NEXT PAGE . . . .

5 My principal always acts this way

4 My principal often acts this way

3 My principal occasionally acts this way

2 My principal seldom acts this way

1 My principal never acts this way

_____ 6. My principal is hesitant about taking initiative in the IIC.

_____ 7. My principal is friendly and approachable.

_____ 8. My principal encourages overtime work.

_____ 9. My principal makes accurate decisions.

_____ 10. My principal gets along well with the people above him.

_____ 11. My principal publicizes the activities of the IIC.

_____ 12. My principal becomes anxious when he cannot find out what is coming next.

_____ 13. My principal's arguments are convincing.

_____ 14. My principal encourages the use of uniform procedures.

_____ 15. My principal permits the IIC members to use their own judgment in solving problems.

_____ 16. My principal fails to take necessary action.

_____ 17. My principal does little things to make it pleasant to be a member of the IIC.

_____ 18. My principal stresses being ahead of competing groups.

_____ 19. My principal keeps the IIC working together as a team.

_____ 20. My principal keeps the IIC in good standing with higher authority.

_____ 21. My principal speaks as the representative of the IIC.

_____ 22. My principal accepts defeat in stride.

GO ON TO THE NEXT PAGE . . . .

5 My principal always acts this way

4 My principal often acts this way

3 My principal occasionally acts this way

2 My principal seldom acts this way

1 My principal never acts this way

_____ 23. My principal argues persuasively for his point of view.

_____ 24. My principal tries out his ideas in the IIC.

_____ 25. My principal encourages initiative in the IIC members.

_____ 26. My principal lets other persons take away his leadership in the IIC.

_____ 27. My principal puts suggestions made by the IIC into operation.

_____ 28. My principal needles IIC members for greater effort.

_____ 29. My principal seems able to predict what is coming next.

_____ 30. My principal is working hard for a promotion.

_____ 31. My principal speaks for the IIC when visitors are present.

_____ 32. My principal accepts delays without becoming upset.

_____ 33. My principal is a very persuasive talker.

_____ 34. My principal makes his attitudes clear to the IIC.

_____ 35. My principal lets the IIC members do their work the way they think best.

_____ 36. My principal lets the IIC members take advantage of him.

_____ 37. My principal treats all IIC members as his equals.

_____ 38. My principal keeps the work moving at a rapid pace.

_____ 39. My principal settles conflicts when they occur in the IIC.

_____ 40. My principal's superiors act favorably on most of his suggestions.

GO ON TO THE NEXT PAGE . . . .

5 My principal always acts this way

4 My principal often acts this way

3 My principal occasionally acts this way

2 My principal seldom acts this way

1 My principal never acts this way

_____ 41. My principal represents the IIC at outside meetings.

_____ 42. My principal becomes anxious when waiting for new developments.

_____ 43. My principal is very skillful in an argument.

_____ 44. My principal decides what shall be done and how it shall be done.

_____ 45. My principal assigns a task, then lets the IIC members handle it.

_____ 46. My principal is the leader of the IIC in name only.

_____ 47. My principal gives advance notice of changes.

_____ 48. My principal pushes for increased production.

_____ 49. Things usually turn out as my principal predicts.

_____ 50. My principal enjoys the privileges of his position.

_____ 51. My principal handles complex problems efficiently.

_____ 52. My principal is able to tolerate postponement and uncertainty.

_____ 53. My principal is not a very convincing talker.

_____ 54. My principal assigns IIC members to particular tasks.

_____ 55. My principal turns the IIC members loose on a job, and lets them go to it.

_____ 56. My principal backs down when he ought to stand firm.

_____ 57. My principal keeps to himself.

_____ 58. My principal asks the IIC members to work harder.

GO ON TO THE NEXT PAGE . . . .

5 My principal always acts this way

4 My principal often acts this way

3 My principal occasionally acts this way

2 My principal seldom acts this way

1 My principal never acts this way

_____ 59. My principal is accurate in predicting the trend of events.

_____ 60. My principal gets his superiors to act for the welfare of the IIC members.

_____ 61. My principal gets swamped by details.

_____ 62. My principal can wait just so long, then blows up.

_____ 63. My principal speaks from a strong inner conviction.

_____ 64. My principal makes sure that his part in the IIC is understood by the IIC members.

_____ 65. My principal is reluctant to allow the IIC members any freedom of action.

_____ 66. My principal lets some IIC members have authority that he should keep.

_____ 67. My principal looks out for the personal welfare of IIC members.

_____ 68. My principal permits the IIC members to take it easy in their work.

_____ 69. My principal sees to it that the work of the IIC is coordinated.

_____ 70. My principal's word carries weight with his superiors.

_____ 71. My principal gets things all tangled up.

_____ 72. My principal remains calm when uncertain about coming events.

_____ 73. My principal is an inspiring talker.

_____ 74. My principal schedules the work to be done.

GO ON TO THE NEXT PAGE . . . .

5 My principal <u>always</u> acts this way

4 My principal <u>often</u> acts this way

3 My principal <u>occasionally</u> acts this way

2 My principal <u>seldom</u> acts this way

1 My principal <u>never</u> acts this way

_____ 75. My principal allows the IIC a high degree of initiative.

_____ 76. My principal takes full charge when emergencies arise.

_____ 77. My principal is willing to make changes.

_____ 78. My principal drives hard when there is a job to be done.

_____ 79. My principal helps IIC members settle their differences.

_____ 80. My principal gets what he asks for from his superiors.

_____ 81. My principal can reduce a madhouse to system and order.

_____ 82. My principal is able to dealy action until the proper time occurs.

_____ 83. My principal persuades others that his ideas are to their advantage.

_____ 84. My principal maintains definite standards of performance.

_____ 85. My principal trusts the IIC members to exercise good judgment.

_____ 86. My principal overcomes attempts made to challenge his leadership.

_____ 87. My principal refuses to explain his actions.

_____ 88. My principal urges the IIC to beat its previous record.

_____ 89. My principal anticipates problems and plans for them.

_____ 90. My principal is working his way to the top.

_____ 91. My principal gets confused when too many demands are made of him.

GO ON TO THE NEXT PAGE . . . .

5 My principal always acts this way

4 My principal often acts this way

3 My principal occasionally acts this way

2 My principal seldom acts this way

1 My principal never acts this way

_____ 92. My principal worries about the outcome of any new procedure.

_____ 93. My principal can inspire enthusiasm for a project.

_____ 94. My principal asks that IIC members follow standard rules and regulations.

_____ 95. My principal permits the IIC to set its own pace.

_____ 96. My principal is easily recognized as the leader of the IIC.

_____ 97. My principal acts without consulting the IIC.

_____ 98. My principal keeps the IIC working up to capacity.

_____ 99. My principal maintains a closely knit IIC.

_____100. My principal maintains cordial relations with superiors.

GO ON TO THE NEXT PAGE . . . .

SECTION IV

PART I INSTRUCTIONAL IMPROVEMENT COMMITTEE EFFECTIVENESS

The Center is interested in your perceptions of the overall effectiveness of your school's Instructional Improvement Committee (IIC). Four categories of effectiveness are listed below. After each of the categories, please check the degree of effectiveness of your Instructional Improvement Committee in that category.

	THE DEGREE OF THIS MEASURE FOR OUR IIC IS				
	Very Low	Low	Mod-erate	High	Very High
ADAPTIVENESS: Flexibility; the adoption of new procedures and practices that were uniquely needed for your school.	___	___	___	___	___
PRODUCTION: The number of plans, procedures, and services the IIC has provided for your school.	___	___	___	___	___
EFFICIENCY: The amount of production relative to the time devoted to IIC meetings.	___	___	___	___	___
JOB SATISFACTION: The satisfaction, or morale, of IIC members.	___	___	___	___	___

PART II OPERATIONAL INFORMATION

How frequently does your IIC meet? _____

Approximately what is the average amount of time your IIC spends in meetings each month (in hours)? _____

THIS CONCLUDES THE INSTRUMENT. THANK YOU FOR YOUR COOPERATION. PLEASE STAPLE THE INSTRUMENT TOGETHER AND RETURN IT TO YOUR PRINCIPAL.

Experimental Copy/February 1972

WISCONSIN RESEARCH AND DEVELOPMENT CENTER FOR COGNITIVE LEARNING

THE UNIVERSITY OF WISCONSIN
1404 REGENT STREET
MADISON, WISCONSIN 53706
PHONE 262-4901 AREA 608

February, 1972

Dear Principal:

I sincerely appreciate your willingness to cooperate in this study. The following directions are for distribution, collection, and return of the enclosed questionnaires.

1. You, the building principal, should respond to the green form.

2. Distribute the yellow forms in Envelope A to all personnel who are regular members/participants of your building's Instructional Improvement Committee.

3. Distribute the white forms in Envelope B to all remaining certificated personnel and aides in your building who are not regular members/participants of the Instructional Improvement Committee.

4. All questionnaires should be completed by the respondents and returned to you within two days.

5. Return yellow forms to Envelope A, white forms to Envelope B, and return them with your green form in the self-addressed envelope included for this purpose.

Your assistance in returning the questionnaires within five days after receiving them will be extremely helpful. I thank you very much.

Sincerely,

Kenneth B. Smith
Administrative Assistant

KBS/sjc

Enclosures

WISCONSIN RESEARCH AND DEVELOPMENT CENTER FOR COGNITIVE LEARNING

THE UNIVERSITY OF WISCONSIN
1404 REGENT STREET
MADISON, WISCONSIN 53706
PHONE 262-4901 AREA 608

February, 1972

Dear Principal:

As a part of the final phase of a two-phase study, I am asking you and your staff members to respond to the enclosed questionnaire. No more than five minutes of each member's time is required to complete it.

Directions for distribution and collection are:

(1) The questionnaires are to be distributed to all staff members, including yourself.

(2) Allow at least one day for yourself and your staff to complete the questionnaire.

(3) Be sure that all distributed questionnaires are completed and returned.

(4) Return all completed questionnaires within a week of receiving them via the enclosed, self-addressed envelope.

This second phase questionnaire was considered desirable in that it provided a time separation in respondent perception of actual IIC effectiveness measures.

The next contact I will be having with you will be to provide you with the results of the study. The Center will prepare them in the form of a technical paper and it will be mailed to you early this summer.

Please extend my gratitude to your staff for the time and cooperation they have given in assisting the Center with this study; and for your interest and considerable help, I am sincerely appreciative.

Thank you.

Sincerely,

Kenneth B. Smith
Administrative Assistant

KBS/sjc

Enclosures

APPENDIX B

WISCONSIN RESEARCH AND DEVELOPMENT CENTER FOR COGNITIVE LEARNING

THE UNIVERSITY OF WISCONSIN
1404 REGENT STREET
MADISON, WISCONSIN 53706
PHONE 262-4901 AREA 608

January 14, 1972

Consulting Psychologists Press
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Palo Alto, California 94036

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I realize that to retain its validity and usefulness any reproduction of FIRO-B must be made using the same directions and ordering of items.

Your consideration of this request is gratefully appreciated.

Sincerely,

Kenneth B. Smith
Administrative Assistant

KBS/sjc

CONSULTING PSYCHOLOGISTS PRESS INC.
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PALO ALTO, CALIFORNIA
94306

January 10, 1972

Kenneth B. Smith
Wisconsin Research and Development Center for Cognitive Learning
The University of Wisconsin
1404 Regent Street
Madison, Wisconsin 53706

Dear Mr. Smith:

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by John D. Black

John D. Black , Ph.D.

APPENDIX C

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WISCONSIN RESEARCH AND DEVELOPMENT CENTER FOR COGNITIVE LEARNING

THE UNIVERSITY OF WISCONSIN
1404 REGENT STREET
MADISON, WISCONSIN 53706
PHONE 262-4901 / AREA 608

I am writing you to solicit your assistance in a study that we are planning to conduct in multiunit elementary schools that are in their second year of operation.

Although the multiunit elementary school is being implemented nationally in its present form, research and development are required to provide the basis for refinement of the IGE organization.

The purpose of this study is to identify the variables which are important in the cooperative decision-making process in the MUS-E's Instructional Improvement Committee. The results of the study will be important to those who are concerned with the smooth functioning of the multiunit school's organizational structure. The proposed study is a natural extension of the prior research by Professor Roland Pellegrin which was able to characterize the overall operations of three multiunit schools. Professor Richard Rossmiller of the Research and Development Center and Department of Educational Administration is directing this study with my assistance.

The design of the study involves the use of a questionnaire to determine perceptions of decision-making levels for several administrative tasks, background data and personal interaction skills of each IIC member, and the principal's leadership qualities. I am enclosing a copy of the questionnaire for your information.

A second phase of the study will be conducted in six schools selected on the basis of the data collected from the questionnaire. This phase will consist of interviews of no more than thirty minutes with the unit leaders and principals in the six selected MUS-E's. The first phase of the study is planned for February and contacts for the second phase will be made in early March for mid-March interviews.

We feel that the results of this study will have pertinence not only to MUS-E organizational theory, but also to you as you formulate plans for the future of multiunit schools in your district. Let me assure you that when we report the study's findings to a general audience, the identity of individual schools and personnel will be withheld.

Could you respond to this proposal at least tentatively within the next ten days. A response sheet is attached; please indicate your intentions and mail in the self-addressed, stamped envelope accompanying this letter. If you should have any questions or should want more information, please feel free to call me at (608) 262-0058.

Sincerely,

Kenneth B. Smith
Administrative Assistant

KBS/sjc

Enclosure

APPENDIX D

APPENDIX D

In Chapter II a rationale was given for weighting the IIC Production score with each IIC's standardized decision involvement score and for weighting the IIC Efficiency score with each IIC's standardized ratio of decision involvement to mean IIC meeting hours per month. A description of the procedures utilized in obtaining the two weightings appears in this appendix.

After calculating the mean decision involvement score across all respondents in each sample school, each mean decision involvement score was standardized using the formula

$$Z = \frac{X-M}{S} \quad [1]$$

In order to calculate standardized score, or Z-score, for each mean decision involvement score, the mean (M) and standard deviation (s) of the decision involvement scores across all respondents in all sample schools was determined from the frequency distribution, which graphically appears in Table D.1, using the formulas

$$M = \frac{\Sigma xf}{N} \quad [2]$$

$$S = \sqrt{\frac{\Sigma x^2 f}{N} - M^2} \quad [3]$$

---

[1] Hage, p. 186.

[2] Ibid., p. 162.

[3] Ibid., p. 180.

Table D.2 shows the decision involvement distribution in tabular form accompanied by the calculations required to determine the mean and standard deviation of the decision involvement scores. Once the mean of 20.87 and the standard deviation of 9.29 were determined for the decision involvement scores, each IIC's mean decision involvement scores was standardized. Table D.3 shows the mean decision involvement score for each sample school's IIC, the difference of each school's mean decision involvement score and the distribution mean, and the standard, or Z score of that school's IIC mean decision involvement score.

Following the standardization procedure, each IIC's mean Production score was weighted by adding the standard score to it. This procedure is shown in Table D.4.

The procedure used for weighting each IIC's Efficiency score was accomplished in a similar manner. Table D.5 shows each IIC's mean decision involvement score being divided by the IIC's mean number of meeting hours per month. From the derived ratios, a mean (M) of 5.61 and a standard deviation (s) of 4.172 was calculated using the formulas

$$M = \frac{\Sigma x}{N}$$ [1]

$$S = \sqrt{\frac{\Sigma (x - M)^2}{N}}$$ [2]

Once the mean and standard deviation of the ratios were calculated each ratio was standardized using the same formula as that for standardizing

---

[1] Hage, p. 161.

[2] Ibid., p. 177.

the decision involvement score. Table D.5 also shows each derived ratio, and each ratios standard, or Z score.

Following the standardization procedure, each IIC's mean Efficiency score was weighted by adding the standard score to it. This procedure is shown in Table D.7.

The data analysis reported in the first section of Chapter III subsequently resulted in the rejection of a weighting procedure for the mean Efficiency score.

TABLE D.1

FREQUENCY DISTRIBUTION OF DECISION INVOLVEMENT
TOTALS -- ALL RESPONDENTS: ALL SCHOOLS

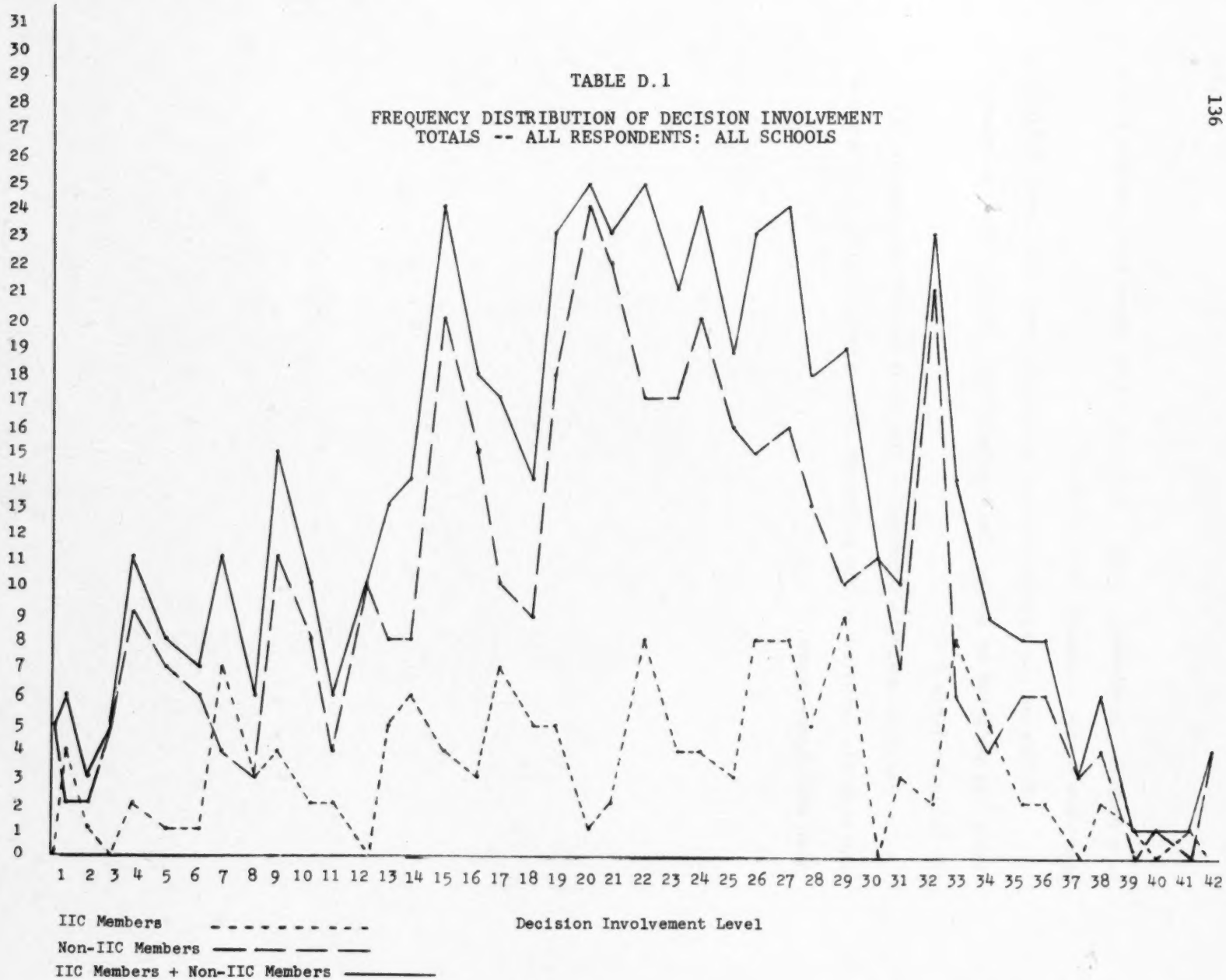

TABLE D.2

x	f	f(x)	$f(x^2)$
0	5	0	0
1	6	6	6
2	3	6	12
3	5	15	45
4	11	44	704
5	8	40	200
6	7	42	252
7	11	77	539
8	6	48	384
9	15	135	1215
10	10	100	1000
11	6	66	726
12	10	120	1440
13	13	169	2197
14	14	196	2744
15	24	360	5400
16	18	288	4608
17	17	289	4913
18	14	252	4536
19	23	437	8303
20	25	500	10000
21	23	483	10143
22	25	550	12100
23	21	483	11109
24	24	576	13824
25	19	475	11875
26	23	598	15548
27	24	648	17496
28	18	504	14112
29	19	551	15979
30	11	330	9900
31	10	310	9610
32	23	736	23552
33	14	462	15246
34	9	306	10404
35	8	280	9800
36	8	288	10368
37	3	111	4107
38	6	228	8664
39	1	39	1521
40	1	40	1600
41	1	41	1681
42	4	168	7056
	N = 546	Σxf = 11,397	$\Sigma x^2 f$ = 284,919

$$S = \sqrt{\frac{\Sigma x^2 f}{N} - M^2}$$

$$= \sqrt{\frac{284,919}{546} - (20.87)^2}$$

$$= 9.29$$

$$M = \frac{\Sigma xf}{N}$$

$$= \frac{11,397}{546}$$

$$= 20.87$$

TABLE D.3

School	DI = (X)	X-M	Z
1	25.95	5.08	.547
2	11.56	- 9.31	-1.002
3	21.95	1.08	.116
4	21.25	.38	.041
5	13.67	- 7.20	- .775
6	15.45	- 5.42	- .583
7	20.00	- .87	- .094
8	24.67	3.80	.409
9	21.95	1.08	.116
10	14.50	- 6.37	- .686
11	22.75	1.88	.202
12	19.75	- 1.12	.121
13	33.27	12.40	1.335
14	28.85	7.98	.859
15	17.37	- 3.50	- .377
16	22.64	1.77	.191
17	24.74	3.87	.417
18	24.50	3.63	.391
19	20.89	.02	.002
20	21.54	.67	.072
21	24.70	3.83	.412
22	11.22	- 9.65	-1.039
23	25.33	4.46	.480
24	25.83	4.96	.534
25	26.32	5.45	.587
26	20.85	- .02	- .002
27	8.80	-12.07	-1.300
28	22.35	1.48	.159
29	24.41	3.54	.381
30	15.29	- 5.58	.601
31	13.91	- 6.96	- .749

M = 20.87

S = 9.29

$$Z = \frac{X - M}{S}$$

TABLE D.4

School	Mean IIC Production	Production Weighting	Weighted Production Score
1	3.44	.547	3.987
2	2.64	-1.002	1.638
3	3.17	.116	3.286
4	3.08	.041	3.121
5	2.68	- .775	1.905
6	3.69	- .583	3.107
7	3.29	.094	3.196
8	3.67	.409	4.079
9	3.56	.116	3.676
10	2.43	- .686	1.744
11	3.00	.202	3.202
12	4.29	.121	4.411
13	3.86	1.335	5.195
14	3.69	.859	4.549
15	2.67	- .377	2.293
16	3.17	.191	3.361
17	3.64	.417	4.057
18	3.80	.391	4.191
19	3.32	.002	3.322
20	3.95	.072	4.022
21	3.73	.412	4.142
22	2.40	-1.039	1.361
23	2.75	.480	3.230
24	3.20	.534	3.734
25	3.52	.587	4.107
26	2.82	- .002	2.818
27	1.89	-1.300	.590
28	3.33	.159	3.489
29	4.21	.381	4.591
30	3.38	- .601	2.779
31	3.00	- .749	2.251

TABLE D.5

School	÷	DI	Hrs/Month	=	Ratio (X)	Z = $\frac{X-M}{S}$
1		25.95	9.40		2.76	- .645
2		11.56	4.60		2.51	- .702
3		21.95	5.00		4.39	- .276
4		21.25	5.50		3.86	- .396
5		13.67	6.90		1.98	- .822
6		20.00	4.50		4.44	- .265
7		24.67	6.10		4.04	- 3.55
8		21.95	6.50		3.38	- .505
9		14.50	5.20		2.79	- .638
10		22.75	5.50		4.14	- .333
11		19.75	4.60		4.29	- .299
12		33.27	4.18		7.96	.532
13		28.55	1.66		17.38	2.665
14		17.37	4.40		3.95	- .376
15		22.64	4.63		4.89	- .163
16		24.74	4.69		5.28	- .075
17		24.50	1.30		18.85	2.997
18		20.89	3.13		6.67	.240
19		21.54	8.60		2.50	- .704
20		24.70	8.70		2.84	- .627
21		11.22	1.30		8.63	.684
22		25.33	1.50		16.87	2.549
23		25.83	4.37		5.91	.068
24		26.32	4.30		6.12	.115
25		20.85	4.50		4.63	- .222
26		8.80	1.60		5.50	- .025
27		22.35	6.44		3.47	- .484
28		24.41	13.00		1.88	- .844
29		15.29	6.26		2.44	- .718
30		13.91	3.50		3.95	- .376
31		15.45	2.24		6.89	.290

N = 31

M = 5.61

S = 4.4172

TABLE D.6

School	Mean IIC Efficiency	Efficiency Weighting	Weighted Efficiency Score
1	2.78	- .645	2.135
2	2.73	- .702	2.028
3	3.22	- .276	2.944
4	3.21	- .396	2.814
5	2.79	- .822	1.968
6	3.53	- .265	3.265
7	3.53	- .355	3.175
8	3.63	- .505	3.125
9	2.52	- .638	1.882
10	3.25	- .333	2.917
11	4.25	- .299	3.951
12	3.79	.532	4.322
13	3.92	2.665	6.585
14	3.00	- .376	2.624
15	3.36	- .163	3.197
16	3.71	- .075	3.635
17	3.94	2.997	6.937
18	3.12	.240	3.360
19	3.95	- .704	3.246
20	3.82	- .627	3.193
21	2.60	.684	3.284
22	3.25	2.549	5.799
23	3.20	.068	3.268
24	3.61	.115	3.725
25	2.82	- .222	2.598
26	2.22	- .025	2.195
27	3.20	- .484	2.716
28	4.00	- .844	3.156
29	3.05	- .718	2.332
30	3.22	- .376	2.844
31	3.72	.290	4.010

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